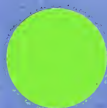


Health Care Financing Extramural Report

Evaluation of Community-
Oriented Long-Term Care
Demonstration Projects

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Health Care Financing Administration

Health Care Financing

Extramural Report

The Office of Research and Demonstrations, Health Care Financing Administration, directs more than 300 intramural and extramural research, demonstration, and evaluation projects. The projects seek alternative ways to finance, organize, and deliver health services, as well as assess the impact of Federal programs on health care costs, providers, and beneficiaries. The Health Care Financing *Extramural Report* series represents the final reports from selected extramural projects funded by the Office of Research and Demonstrations. The statements and data contained in each report are solely those of the awardee and do not express any official opinion of or endorsement by the Health Care Financing Administration.

In 1980, the Health Care Financing Administration sponsored a national evaluation of 13 projects demonstrating the provision of coordinated, community-oriented services to impaired and aged Medicare and Medicaid beneficiaries. These projects provided long-term care under Medicare and/or Medicaid waivers that

permitted reimbursement for clients and services not typically covered by the Medicare and/or Medicaid programs. The projects tested whether different methods of case-managed, coordinated delivery of community-oriented health and social services resulted in more cost-effective use of both institutional and noninstitutional long-term care.

The evaluation contractor, Berkeley Planning Associates of Berkeley, California, with the assistance of two subcontractors, the Western Center for Health Planning in San Francisco, and the Rehabilitation Research and Training Center in Aging at the University of Pennsylvania, studied the 13 demonstration projects but concentrated most of the evaluation resources on an in-depth study of six of the projects. Various models of community care were identified and compared with the traditional service system to determine the differential impacts of the alternative service models. This report describes the evaluation findings and the implications for future long-term care policy and research.

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Demonstration Projects

U.S. Department of Health and Human Services
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¹This report is dedicated to the memory of Brenda Diane Haskins (September 13, 1950 - February 25, 1985) under whose direction the Long Term Care Project flourished. We will miss her good judgment, analytical abilities, managerial skills and fine sense of humor.

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Brenda Haskins, Project Director
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Individual volumes for each of the following five projects:

- New York City Home Care Project;
- Long-Term Care Project of North San Diego County;
- Project OPEN;
- On Lok Senior Health Services Community Care Organization for Dependent Adults; and
- South Carolina Community Long-Term Care Project.

APPENDIX B: Project Case Studies. Individual volumes for each of the following six projects:

- New York City Home Care Project;
- Long-Term Care Project of North San Diego County;
- Project OPEN;
- On Lok Senior Health Services Community Care Organization for Dependent Adults;
- South Carolina Community Long-Term Care Project; and
- Florida Pentastar Project.

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I. INTRODUCTION

For many years the Department of Health and Human Services, and particularly the Health Care Financing Administration and the Administration on Aging, have supported research and demonstration to develop humane, efficient and effective long-term care services. It has been believed since the early 1970s that the frail aged often prefer community-oriented long-term care services to institutional care, and that with adequate supply and coordination of these services, potential exists for reducing the rate of growth in public expenditures for long-term care (Kistin and Morris, 1972; Kaufman, 1980; Gurland, et al., 1981). While demand by the aged and their families for a wider range of options in long-term care continues to grow (General Accounting Office, 1982), and the supply of these services has shown a remarkable increase in many parts of the country,¹ controversy still exists concerning which approaches to the delivery and financing of community-oriented long-term care are most clinically and economically appropriate.

To explore different approaches to providing and financing publicly-supported community-based long-term care, the Health Care Financing Administration (HCFA) in late 1980 sponsored a national evaluation of 13 projects demonstrating the provision of coordinated, community-oriented services to impaired and aged Medicare and Medicaid beneficiaries. These projects provided long-term care under Section 222 Medicare and/or Section 1115 Medicaid waivers that allow reimbursement for clients and for services not typically covered by Medicare and Medicaid. The projects tested whether various methods of case-managed, coordinated delivery of community-oriented health and social services could result in more cost-effective use of both institutional and non-institutional long-term care. The 13 projects included in the national evaluation were:

- the New York City Home Care Project (HCP);
- the Community Long-Term Care Project (LTCP) of North San Diego County;

- the ACCESS II program of Monroe County, New York;
- the South Carolina Community Long-Term Care Program (CLTCP);
- On Lok's Community Care Organization for Dependent Adults (CCODA), San Francisco;
- Project OPEN of Mount Zion Hospital, San Francisco;
- Triage II, Connecticut;
- Georgia's Alternative Health Services project (AHS);
- Wisconsin's Community Care Organization, Milwaukee;
- Florida's Pentastar project;
- California's Multipurpose Senior Services Project (MSSP);
- Oregon FIG/Waiver Continuum of Care Project for the Elderly; and
- the Texas ICF-II project.

This report summarizes major findings from the national evaluation, which was conducted by Berkeley Planning Associates (BPA) of Berkeley, California with the assistance of two subcontractors: the Western Center for Health Planning in San Francisco and the Rehabilitation Research and Training Center in Aging, University of Pennsylvania.

GOALS AND SCOPE OF THE NATIONAL EVALUATION

The primary objectives of the national evaluation were:

- (1) to determine the clinical efficacy and cost-effectiveness of the demonstration projects in providing comprehensive care to chronically ill aged and other dependent adults;
- (2) to determine the impact of community-based long-term care services on the demonstration projects' selected clients, providers of both formal and informal care, local communities, and the federal government as the public insurer of long-term care; and
- (3) to identify the key factors among the projects, relative to their host communities, that contribute to or

impede the clinical efficacy and cost-effectiveness of the HCFA demonstrations.

As part of the overall national evaluation, seven major levels of analysis were undertaken: (1) analysis of key project characteristics and classification of intervention approaches; (2) analysis of targeting goals and client group composition; (3) analysis of participant outcomes (functional status and mortality); (4) analysis of service utilization and costs; (5) analysis of case management functions and costs; (6) analysis of informal supports and (7) analysis of diffusion of innovations from the demonstrations. Figure 1 lists the demonstration projects which were included in each level of analysis.

During its three years, the national evaluation has undergone considerable narrowing of its focus in response to resource constraints and further refinement of policy concerns in long-term care. At the request of HCFA and the demonstration projects, analysis of participant outcomes and cost-effectiveness received priority throughout the study. In order to conduct an in-depth evaluation in these two priority areas, the original scope of this component of the evaluation was narrowed from 13 projects to focus on three primary and three secondary projects.

The three primary evaluation sites identified by HCFA early in the study were: the New York City Home Care Project (HCP), the Long-Term Care Project (LTCP) of North San Diego County, and the ACCESS II program of Monroe County, New York. These projects were chosen for primary evaluations because they lacked independent research components or had inadequate resources available for an evaluation. Since the ACCESS II project did not become operational until November 1982 and is anticipated to continue serving clients until July 1986, even preliminary analyses of the program (based on a quasi-experimental design including comparative samples in two other upstate New York counties) will not be available until late 1984.

Three other projects were selected for inclusion in the in-depth analysis of participant outcomes and cost-effectiveness: the South Carolina Community Long-Term Care Program (CLTCP); On Lok's Community Care Organization for Dependent Adults (CCODA), San Francisco; and

Figure 1.1
Projects Included in the Various Levels of Analysis
Undertaken for the National Evaluation

Analysis of Key Project Characteristics and Classification of Intervention Approaches	Analysis of Targeting Goals and Client Group Composition	Analysis of Participant Outcomes: Functional Status and Mortality	Analysis of Service Utilization and Costs	Analysis of Case Management Function Costs	Analysis of Informal Supports	Analysis of Diffusion of Innovations from the Demonstrations
1) New York City HCP	1) New York City HCP	1) New York City HCP	1) New York City HCP	1) New York City HCP	1) New York City HCP	1) South Carolina CLTCP
2) San Diego LTCP	2) San Diego LTCP	2) San Diego LTCP	2) San Diego LTCP	2) San Diego LTCP	2) San Diego LTCP	2) MSP
3) South Carolina CLTCP	3) South Carolina CLTCP	3) South Carolina CLTCP	3) South Carolina CLTCP	3) South Carolina CLTCP	3) South Carolina CLTCP	3) ACCESS
4) On Lok CCODA	4) On Lok CCODA	4) On Lok CCODA	4) On Lok CCODA	4) On Lok CCODA		
5) Project OPEN	5) Project OPEN	5) Project OPEN	5) Project OPEN	5) Project OPEN		
6) ACCESS II	6) ACCESS II	6) ACCESS II ^a	6) ACCESS II ^a			
7) Triage II	7) Triage II					
8) Wisconsin CCO	8) Wisconsin CCO					
9) Florida Pentastar	9) Florida Pentastar					
10) MSSP	10) MSSP					
11) Georgia AHS						
12) Oregon FIG/Waiver						
13) Texas ICF-II						

^aACCESS II findings on participant outcomes and service utilization and costs will be available as a separate report in 1986.

Project OPEN of Mt. Zion Hospital, San Francisco. These three programs were selected because they represent important contrasts to the primary projects with respect to their intervention designs, target populations and host communities.

While not included in the detailed analyses of participant and cost impacts, the remaining demonstration projects were used in specifying models of alternative long-term care intervention, target group definitions, or case management systems. Three of these programs, Triage, Georgia's Alternative Health Services Project (AHS), and the Wisconsin Community Care Organization (CCO), were excluded from the in-depth evaluation because adequate primary and secondary analyses of their experiences have been reported elsewhere.² The results of these oldest programs are well known and are referenced where appropriate. The State of Florida's Pentastar project and the State of California's Multipurpose Senior Services Project (MSSP) were excluded from the in-depth evaluation because comprehensive state-sponsored evaluations are underway. The Oregon FIG/Waiver and the Texas ICF-II projects were excluded because of the lack of comparable experimental or quasi-experimental research designs. However, BPA has received a large data base compiled by the State of Texas concerning the demonstration, and hopes to analyze that data if federal support is forthcoming.

The narrowing of the participant outcome and cost-effectiveness evaluation from 13 to five projects (which excludes ACCESS II data that is not available at this time, but will be incorporated at a later date when available) affords the opportunity for greater detail and specificity in the study of those demonstrations included. This focus does, of course, limit the generalizability of study findings. On the other hand, components of the overall evaluation which included projects not featured in the detailed analyses of participant and cost outcomes provided a unique opportunity to document and study the variations in coordinated community-oriented long-term care programs.

One of the most serious problems facing policy makers in developing national long-term care policy (especially concerning community-oriented care) is the dearth of solid information on how long-term care services are delivered. BPA's description of each of the HCFA demonstration

projects, documentation of case management practices, and analysis of demonstration features are important contributions to the effort to fill this gap in knowledge and form the basis for interpretation of the quantitative study findings.

In this way, material from a number of community care approaches has strengthened the interpretation of data from the five projects that were selected for the in-depth evaluation of participant and cost outcomes. This interpretative background, as well as the analytic approach firmly based on individual program evaluation, distinguishes this evaluation from prior research in long-term care reform.

The Analytic Approach

An approach -- sometimes advocated, but rejected for use in this study -- to analyzing data across a number of research projects is to pool the data from various demonstrations into a single analyses. This approach can be inappropriate for a number of reasons, the two foremost of these being: (a) the projects may be very different from one another on key variables such as client characteristics, range of services, and cost of care; and (b) participants at different sites may be drawn from different populations (e.g., Medicare and/or Medicaid) and may not be comparable on relevant dimensions such as income, living arrangements, and level of disability.

In this study of long-term care programs, there were a number of factors which precluded the pooling of data from the various demonstration projects into a single analyses. For example, there were variations in individual project goals, intervention methods, community contexts and service package configurations, as well as differences in the research designs, assessment variables and procedures, and data acquisition methods.

Because of these variations in individual projects, a two-stage analytical approach was used for the cross-site analysis. During the first stage, the best-available approach to analysis of individual data for each project was pursued. All appropriate measures within the relevant domains (e.g., functional status, participant well-being, unmet needs, and service costs) were utilized, and quantitative analysis of

program impact based on treatment and comparative group differences was undertaken. Qualitative data on program design and intervention approaches were used to guide the interpretation of the findings.

In the second stage of the analysis, which focused on participant outcomes and cost-effectiveness across five selected projects, only those data measures that were available across projects were utilized.³ However, the best available approach to analysis of each individual project's data was still used. The goal was to find the best estimates of program impact for individual projects, focusing on types of impact measures (e.g., functional status and cost variables) of concern to policymakers and program designers. Variations in the direction and magnitude of effects across projects were then described and compared using both quantitative and qualitative data, as appropriate. In some of the cross-cutting analyses, a descriptive approach was used to compare demonstration projects. Large differences between the projects as well as trends and patterns are discussed, but statistical tests of significance were not performed across projects, due to the limitations in the standardization of variables across sites.

The overall analysis plan has been guided by the general concern in the long-term care field and in HCFA that advocacy for community-based long-term care has too often been based largely on qualitative data and nonrigorous research. Consequently, throughout the report, the primary analyses focused on quantitative data and employed a number of rigorous research techniques. First, data from each project's comparison group has been used consistently to assess whether community-based alternatives to traditional long-term care have reduced costs and achieved better participant outcomes. Second, within each project's data set, baseline differences in participants' functional status and other characteristics have been controlled to ensure that seemingly apparent program impacts are not due to differences between the treatment and comparative groups served. Thus, the analyses have excluded, to the maximum extent possible, effects that are due to the type of participants served rather than to the nature of the care. Third, the differences found have been subjected to statistical significance testing to ensure that the findings reported and emphasized for their

substantive importance are not simply findings that might arise due to chance. Fourth, strict, academic standards have been used in judging statistical significance, i.e., .05 significance levels, which make only very strong findings emerge as "significant." Finally, throughout the report, statistically significant findings are emphasized, and the discussion of overall trends and patterns which are not statistically significant is clearly identified as such.

Organization of this Report

Chapter 2 of this report describes the 13 projects included in the overall evaluation and introduces BPA's categorization of the projects in terms of intervention approach. This chapter draws heavily on the individual project analyses and on analyses of project case management systems conducted throughout the evaluation.⁴

Chapter 3 of this report provides a conceptual framework for the overall evaluation and outlines the strengths and limitations of the study. The discussion then turns to methodological issues which had to be addressed for the cross-site analysis of participant outcomes and cost-effectiveness, including: development of a common data set, measurement of reliability and validity, control for biased selection of study participants, control for differential attrition, and development of standard measures of program effect. Chapter 3 is supplemented by Appendix C, "Methodological Issues in Conducting the National Evaluation."

Chapter 4 describes and compares the treatment groups in ten of the demonstration projects for which a common data set was available on key variables that are indicators of the need for long-term care services. This chapter looks at the congruence of project targeting goals with the characteristics of the actual client population obtained. Target groups are categorized in terms of: (a) a potential client's location within the system of care -- community or institutional, and (b) the client's expected trajectory of service use -- community or institutional. Project experiences are then used to analyze various methods for defining the most appropriate target groups for community care interventions.

Chapters 5 and 6 summarize the findings from the in-depth evaluation of participant and cost outcomes for the five selected projects: New York City HCP, the San Diego LTCP, South Carolina CLTCP, On Lok CCODA, and Project OPEN.

Chapter 5 presents the study's findings concerning demonstration impact on participant outcomes for the five projects, focusing on participants' functional status and mortality. Chapter 6 presents findings concerning cost-effectiveness in terms of: traditional Medicare and Medicaid utilization and cost; waived service utilization and cost; and the cost of case management in projects, calculated on an average-per-client, per-month basis. This chapter also presents the cost findings for each of the five projects using a standard measure of program impact which expresses the marginal costs of the demonstration in terms of the number of additional hospital or nursing home days that would need to be used (or saved) by the treatment or comparative samples in order to equalize their total costs of care during the first year after project enrollment. The findings presented in Chapter 5 and 6 provide a basis for critical review of the available service technology in community-based long-term care. Individual project analyses that form the basis of the findings presented in Chapters 5 and 6 are found in the five volumes of Appendix A, "Evaluation of Client Outcomes and Cost-Effectiveness."

Chapter 7 contains results of analyses of the interaction of the formal service system and the informal system of care (i.e., family and friends) over the course of the demonstration for three projects (San Diego LTCP, New York City HCP, and South Carolina CLTCP) where detailed information was available on participant informal support networks. Chapter 7 analyses include a refinement of the concept of unmet needs, which BPA defines as the residual needs of participants that remain after considering the assistance of informal caregivers.

Chapter 8 summarizes a special study undertaken in three states (South Carolina, California and New York) of the diffusion of the HCFA long-term care demonstrations' innovation into long-term care reforms being carried out at the federal, state, and local levels.

Chapter 9 draws policy implications from the three years of data collection and analysis which have been undertaken as part of the evaluation of community-oriented long-term care demonstration projects.

SUMMARY OF MAJOR PERFORMANCE EVALUATION FINDINGS

The five demonstration projects selected for an in-depth analysis of participant outcomes and cost-effectiveness, with the size of their treatment and comparative group samples are:

<u>Project</u>	<u>Sample</u>	
	<u>Treatment Group</u>	<u>Comparative Group</u>
New York City HCP	504	200
On Lok CCODA	69	70
Project OPEN	220	118
San Diego LTCP	555	328
South Carolina CLTCP	539	553

These five projects vary along key program characteristics (described and discussed in Chapters 2 and 4), which can be expected to have an impact on participant and cost outcomes. The key program dimensions are the intervention approach, the targeting goal, and the clients' level of functional impairment.

The five sample projects represent three different intervention approaches: direct control of institutional admissions (South Carolina CLTCP); consolidation of service delivery in a single agency (On Lok CCODA); and upgrading the home care package (San Diego LTCP, New York City HCP, and Project OPEN).

With respect to targeting goals and client characteristics, the five projects represent two different types of targeting goals, while the client population includes individuals at three different levels of functional impairment. The South Carolina CLTCP and On Lok CCODA both targeted clients from a variety of long-term care settings (i.e., hospital, nursing home, or home) with need for either institutional or

community services. These two projects also served clients who were severely impaired relative to the other demonstration projects. The New York City HCP, San Diego LTCP, and Project OPEN all targeted their services to clients in the community who needed community services. However, the level of functional impairment found among clients in these three projects varied considerably. The New York City HCP served a severely impaired client population, while the San Diego LTCP served a moderately impaired client population, and Project OPEN served a client population with minor impairment relative to the other demonstration projects. These five projects are fairly representative of the range of characteristics found among the 13 demonstration projects included in the overall evaluation.

Based on data from the five projects selected for the in-depth evaluation, the principal findings are summarized below.

- In general, the results of the demonstration's impact on participants' functional status were mixed. Change in functional status over time was assessed in three areas: Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), and mental status (MSQ). Statistically significant program impacts related to change in functional status were only found in four projects.
 - In the On Lok program, after controlling for baseline differences, a significant program effect was found on the IADL measure at the 12-month reassessment. Relative to the comparison group, the treatment group improved in IADL.
 - In Project OPEN, controlling for the level of functioning at baseline, a significant treatment effect was noted on the MSQ measure at the six-month reassessment.
 - In the San Diego and New York City projects, after controlling for baseline differences, a significant treatment effect was found on the mental status measure at the 12-month reassessment.

- Although there were few statistically significant program impacts related to participants' functional status, there was an overall pattern for the treatment groups to have more favorable participant outcomes than the comparative groups. In addition, an assessment of change in the functional status of individual clients over time indicated that each of the five projects was successful in maintaining or improving the functional status of more than one-half of their client population.
- While there were no statistically significant program impacts related to mortality, in the majority of the projects, a smaller proportion of the treatment group than the comparative group died within the 12-month study period.

Overall, the findings indicate that community-oriented long-term care provides services that are no less effective than the services provided by the existing institutionally-oriented long-term care system. To the extent that community-oriented long-term care is preferred by the elderly, their families, and society at large for reasons related to societal values, then community-oriented care is not less effective than the traditional long-term care system.

In terms of the evaluation's cost-effectiveness studies, analysis was carried out in the five projects to permit development of a standard unit of measurement for program impacts. The analysis expresses the marginal costs of the demonstration in terms of the additional hospital or nursing home days that would need to be used (or saved) by the treatment or comparative samples in order to equalize their total public costs during the first year after project enrollment. The principal findings are summarized below.

- From the perspective of project intervention designs (see Chapter 3), results suggest that both the direct diversion of nursing home applicants through preadmission screening and expanded community services represented by the South Carolina CLTCP, and the consolidated model of

long-term care represented by On Lok, are associated with reductions in traditional Medicaid or Medicare service use that are not completely offset by the incremental costs of the demonstration (e.g., case management and waived services). In short, these two projects "broke even" in terms of public costs and showed some likelihood of constraining growth in public payments.

- In contrast, the San Diego LTCP and New York City's HCP, both representing an intervention designed to upgrade the home care package, did not break even. In both cases, the high costs of the waived service packages (including case management) were not associated with reduced acute care and nursing home use, or reduction in overall costs. On the other hand, Project OPEN, with a similar intervention design to San Diego's LTCP and the New York City HCP, showed some likelihood of breaking even. The project, a hospital-based consortium of providers, was able to introduce some control of Medicare-reimbursed hospitalizations, without excessively increasing public costs through the waived services. It should be noted, however, that Project OPEN's comparative group used nearly the same amount of the expanded community services as did the treatment group. The comparative group members either purchased these services out-of-pocket or received them through other public sources, without the assistance of case management. In a different, less service-rich community environment than San Francisco, such services might not be available to the normal population represented by a control group, thus, the differential impact between a treatment and a comparative group might well be larger.

In many respects the findings from this national evaluation confirm findings of several recent studies concerning the cost-effectiveness of community-oriented long-term care.

- There is some support for the contention that coordinated community-oriented long-term care programs can reduce nursing home use, if projects target individuals as they apply for nursing home admission or are at the SNF certifiable level of care.
- The demonstration projects, in most cases, did not impact acute care use. In a few cases acute hospitalization increased under the demonstration.
- For most of the demonstrations, the expanded service systems are more expensive to the public in the short run than the existing system of care, given the lack of targeting to those most at-risk of institutionalization. However, within a breakeven context, hopeful findings for cost containment and reduction emerged for two projects, the South Carolina CLTCP and On Lok, which, in fact, served individuals with demonstrated risk of nursing home placement.

Finally, several of the findings from this study point to important factors related to cost-effectiveness that have not been emphasized in previous studies of community-oriented long-term care.

- Project variations in the likelihood of nursing home use (and, in fact, use of all medical services) cannot be attributed to variations in functioning, as measured by familiar scales such as Activities of Daily Living or mental status. To the contrary, with the exception of the prediction of nursing home use in the South Carolina CLTCP and home health care use in the San Diego LTCF, case mix factors explained less than 5% of the variance in any measure of service use or reimbursement.⁵ This finding is partially an artifact of the low levels of nursing home use in most projects, but still indicates that other factors, such as an individual's relationship to the system of care (e.g., community or institutional

residence at baseline), can be major determinants of service utilization and costs.

- Although the New York City Home Care Project identified one of the most highly impaired samples, the clients made little use of nursing homes. The New York City HCP findings (like San Diego LTCF's findings) suggest that locating frail elders who have service needs (in fact, in some cases, severe service needs) in the community does not automatically result in clear patterns of reduced use of institutional long-term care and associated cost savings. Individuals such as those served by the New York City and San Diego projects are not at risk of institutionalization only because of service needs.
- Informal caregivers (i.e., family and friends) offer a major source of assistance for the impaired elderly and, as such, represent the foundation upon which cost-effective community long-term care interventions should be based. Findings from this study indicate erosion of the informal support systems was, to some extent, evident in each of the demonstration projects studied. In the South Carolina project, however, where the informal caregivers were directly included in service planning and where the service plans for individuals explicitly were designed to augment the informal support systems, there was not a reduction in the level of effort by the informal caregivers, but merely a shift in the kinds of activities undertaken. In the San Diego and New York City projects, where there was not the explicit attention given to the informal support systems, there were, in contrast, both declines in the overall types of care given by informal providers and in the overall levels of care and effort given.
- The findings from the informal support study also suggest informal care outcomes are closely related to the characteristics of a program's target population. In South

Carolina, where expanded community long-term care benefits were offered to clients for whom nursing home placement was imminent, supplementation of the informal support system was the most successful.

NOTES

¹For example, the availability of adult day health care programs grew by 300% between 1977 and 1979 (U.S. DHHS, 1980).

²The results of these demonstrations were reviewed in detail in Appendix D of BPA's Evaluation of Coordinated Community-Oriented Long Term Care Demonstration Projects "Preliminary Report on Work in Progress," October 1982, and are available on request.

³Development of the common data set is described in Chapters 4 through 6 and Appendices A and C of this report.

⁴See, for example, Berkeley Planning Associates, "Preliminary Report on Work in Progress," October 1982, pp. 127-164, as well as Attachment 1 to this report, "Production Costs of Case Management."

⁵This finding is partially an artifact of the low levels of nursing home use in most projects, but still indicates that other factors, such as the individual's relationship to the system of care, determine service use.

II. INTERVENTION APPROACHES AND PROJECT DESCRIPTIONS

INTRODUCTION

This chapter presents a framework useful for classifying the 13 HCFA demonstration projects included in the national evaluation in terms of their "intervention approaches." This typology is a key element in the participant outcome and cost-effectiveness analyses to follow and appears directly linked to demonstration effects.

As part of this discussion, the chapter describes and compares the projects broadly along the following dimensions: waiver type, intervention scale and strategy, and case management approach.¹ As the one service all projects provided, case management was the major tool used in implementing the demonstration projects at the client level. This chapter also briefly describes each of the 13 projects in terms of community characteristics, project goals, client targeting, case management practices, and service packages.

The classification of projects according to intervention approaches and the description of projects along key organizational dimensions presents the broad picture of developments in the area of community-oriented long-term care at the time the national evaluation was undertaken. The information in this chapter provides an important backdrop against which the detailed quantitative analysis on the demonstration impacts of five selected projects can be interpreted.

INTERVENTION APPROACHES

For all their diversity, the HCFA-sponsored demonstration projects shared a number of elements in common. All subscribed to the philosophy of the community care movement, received waivers, carried out case management, and funded new services. In spite of community differences, there was a high level of homogeneity in problem definition across projects.² Lack of community care, deficiencies in health or social

service system performance, medically inappropriate or unnecessary nursing home placement, and increasing costs to state governments and individuals were all commonly identified as major problems. Conceptions about the content of necessary service packages were also remarkably similar and included case management, in-home health, adult daycare, and support services such as transportation and chore service.

When viewed from a systems perspective, however, distinct differences among projects emerge. Essentially, each demonstration project was a goal-directed intervention into a service delivery system, designed to "solve" specific long-term care "problems". These "solutions" have been characterized as the projects' intervention approaches. This concept is critical to the cross-cutting evaluation because cost and effectiveness impacts cannot be interpreted accurately without a clear understanding of what projects set out to do in their communities.

The similarities and differences that characterize project intervention approaches are defined as three elements: waiver type, intervention scale, and intervention strategy. Table 2.1 summarizes these elements, discussed below. Case management similarities and differences are discussed in the following section.

Waiver Type

This element refers to the source of the project funding, whether Medicare or Medicaid. There are consistent differences between the Medicaid and Medicare projects in terms of relative emphasis placed upon the major problems they were addressing in their long-term care systems. The Medicaid projects had a primary emphasis upon local and state concerns, such as high and increasing public expenditures for long-term care services and lack of coordination of state-funded programs. Quite understandably, no Medicare-only projects identified state costs for long-term care as a key problem. Concerns stated by Medicare projects were for service delivery, lack of coordination at the client level, cost-effectiveness, and reduction of repeated hospitalizations due to exacerbations of chronic illness. Hence, whether a project had Medicare or Medicaid waivers was an important factor influencing the design of

Table 2.1
Characteristics of Projects' Intervention Approaches

Characteristic Project	Waiver Type	Intervention Strategy ^a	Scale of Demonstration Intervention ^b	
Long Term Care Project of North San Diego	Medicare	Upgrade home care package available to clients	Single Sample	Subcounty
Home Care Project (New York City)	Medicare	Upgrade home care package available to clients	Multiple Samples	Subcounty
ACCESS (Monroe County, New York)	Medicaid and Medicare	Control client access to and utilization of institutional services	Population	County
Community Long Term Care Project (South Carolina)	Medicaid ^c	Control client access to and utilization of institutional services	Population	Multicounty
On Lok (San Francisco)	Medicare	Consolidate service delivery into a single agency	Single Sample	Subcounty
Project OPEN (San Francisco)	Medicare	Upgrade home care package available to clients	Single Sample	Subcounty
ICF II (Texas)	Medicaid	Control client access to and utiliza- tion of institutional services	Population	State
Pentastar Project (Florida)	Medicaid	Coordinate existing LTC delivery system and fill alternative service gaps	Multiple Samples	Multicounty
MSSP (California)	Medicaid	Coordinate existing LTC delivery system and fill alternative service gaps	Multiple Samples	Subcounty
AHS Project (Georgia)	Medicaid	Develop an alternative LTC services system	Multiple Samples	Multicounty
Triage (Connecticut)	Medicare	Develop an alternative LTC services system	Single Sample	Multicounty
CCO (Wisconsin)	Medicaid	Develop an alternative LTC services system	Multiple Samples	Multicounty
FIG/Waiver (Oregon)	Medicaid	Coordinate existing LTC delivery system and fill alternative service gaps	Population ^d	Multicounty

^aThe strategy reflects a primary emphasis of the project intervention.

^bThe scale of the project intervention includes two elements: (1) the extent to which the project serves the entire eligible population, and (2) the number of separate site catchment areas.

^cCommunity Long Term Care Project is planning to implement the Medicare waivers in the near future.

^dThe FIG intervention affects the entire eligible population. The Waiver intervention is available to a limited number of Medicaid clients.

Scale of Demonstration
Intervention:

Single Sample = the project has a single contiguous catchment area and serves a small portion of the eligible population.

Multiple Samples = the project has more than one catchment area and serves only a small proportion of the eligible population in those areas.

Population = the project has a single catchment area and its intervention affects the entire eligible population in that area.

its intervention approach. Projects such as ACCESS and South Carolina CLTCP combined Medicaid and Medicare waivers.

Originally, of the 13 projects, five had Medicare waivers and eight had Medicaid waivers. ACCESS and South Carolina CLTCP added Medicare waivers during the course of their demonstration periods. It was especially important for these two projects to have both funding sources because their goals were to control access to and utilization of institutional services as a mechanism for reducing state costs.

Scale of Demonstration Intervention

Scale of demonstration intervention includes two elements: (a) the degree to which a project serves the entire eligible population in its service area, and (b) the number of separate sites with different service areas. Projects were divided into three categories in terms of the first element: population, single sample and multiple sample. Four of the 13 projects (ACCESS, Oregon FIG/Waiver, South Carolina CLTCP, Texas ICF-II) were classified as "population"-level approaches because they served the entire eligible population of their service areas. Any client entering the existing public long-term care delivery system was affected by the project. The service areas of population-level projects were either statewide, involving multiple counties, or only one county. "Single sample" projects (San Diego LTCP, On Lok CCODA, Project OPEN, Triage) served a small proportion of the eligible population in a single catchment area, generally on a subcounty basis, with the exception of Triage, which covered seven counties. "Multiple sample" projects (MSSP, Florida Pentastar, Georgia AHS, New York City HCP, and Wisconsin CCO) served a small proportion of eligibles in more than one catchment area, made up of either several subcounty areas or several county-wide service areas.

All of the "population-level" projects had or began with Medicaid waivers, and all of the "single sample" projects had Medicare waivers. This difference in scale among the projects was probably indicative of the difference in intervention emphasis and sponsorship among the projects. The Medicaid projects were sponsored by states and were designed to change the health care system behavior.

Although multiple sample Medicaid projects (MSSP, Florida Pentastar, Georgia AHS, and Wisconsin CCO) did not reach entire populations, they did have relatively large client caseloads. In addition, the multiple site demonstration strategy had the advantage of testing effectiveness in a variety of settings. This feature was particularly relevant to states in that it provided a "pretest," establishing a base of experience for potential future statewide expansion into diverse communities.

In contrast to the Medicaid projects, three of the four Medicare-only projects are single sample in their scope of intervention. The exception, the Home Care Project in New York City, had a small client population (400) but selected multiple sites for operations in order to test differences in effectiveness between health care and social service auspices.

Intervention Strategy

Intervention strategy reflects each project's primary emphasis in regard to the health and social service delivery care system and its theory of effective action. It is the primary goal the project attempted to reach and, as such, directly influenced demonstration methods, target population and service package. Identification of a primary goal, i.e., the intervention strategy, does not negate the multiplicity and complexity of these projects' goals; it does provide a framework for classifying projects in order to analyze demonstration impacts.

Five intervention strategies emerged in the course of studying the HCFA projects:

(1) Direct Control of Institutional Admissions

These projects attempted, through preadmission screening, level-of-care determinations and provision of expanded community services, to divert clients applying for or about to apply for institutional placement to alternative community settings. They also involved some effort to reduce institutional length of stay through the above and other mechanisms.

ACCESS, the Texas ICF-II project, and South Carolina CLTCP all adopted the strategy of controlling their service area populations' access to nursing homes. By enabling early discharge of patients who would otherwise remain hospital inpatients while waiting for nursing home beds, these projects attempted to redirect the existing flow of patients between institutions and the community. Their interventions changed relations in the entire existing long-term care system.

(2) Consolidate Service Delivery

On Lok was the only project to utilize this intervention approach in which all service delivery was consolidated in a single agency. Based on an expanded Health Maintenance Organization (HMO) model, this approach aimed to achieve economy in program administration coupled with increased appropriateness and continuity of service through direct control of both institutional and community-based care.

(3) Develop a Community-Based Long-Term Care Service System

These projects, Triage, Georgia AHS and Wisconsin CCO, represent the first generation of HCFA demonstration projects. They began in an era (early 1970s) when resources for service expansion were available, and selected locations where the supply of alternative services was underdeveloped. They sought to stimulate the availability of community-based services while developing the components of a new system of alternative care, such as standards for alternative service assessment, care planning processes, and cost containment mechanisms. They did not, in general, attempt to divert nursing home applicants, deinstitutionalize nursing home residents, or expedite acute care discharges.

(4) Coordinate Existing System and Fill Gaps

The MSSP, Florida Pentastar, and Oregon Fig/Waiver projects emphasized coordination of the existing long-term care service system and filled specific service gaps in the continuum of care. Unlike Triage, Georgia AHS, and Wisconsin CCO, these projects were founded in states where the existing long-term care delivery system was relatively well-developed. They were also among the "second generation" of

demonstrations designed in an era of fiscal austerity by state agencies that had pressing concerns for controlling budgets. Thus, these projects developed intervention strategies which addressed the lack of a case management function, bridged the fragmentation in the health and social service systems, and ameliorated cost inefficiencies through closer coordination. Because the existing systems were highly developed, only occasional development of certain new services in particular areas (i.e., "gap filling") was necessary. Some order was brought into the complex array of providers and funding sources by coordination at both the client and agency levels.

(5) Upgrade the Home Care Package

This approach was employed by the San Diego LTCP, Project OPEN, and the New York City HCP. In attempting to improve home care delivery, they focused on a particular segment of the health system rather than the entire entity. These projects functioned in service-rich environments where coordination and service gaps were a problem. However, rather than change the system of care, they sought to demonstrate new models that could be applied systemwide in the future. All of these projects were Medicare demonstrations and, as such, focused on the reduction of unnecessary hospitalization while experimenting with Medicare program reforms that reflected the needs of the current aging population (i.e., incorporating a broader concept of need associated with chronic illness).

ROLE OF CASE MANAGEMENT

Much of the analysis in this report focuses on the differences among projects in terms of cost and effectiveness outcomes. This chapter has emphasized the importance of understanding project intervention strategies; that is, defining what projects actually set out to do within their long-term care systems as a necessary precursor to interpreting evaluation results. However, it is useful to step back and acknowledge the element that unified the entire demonstration experiment

and provided a vehicle for implementing each demonstration's intervention strategy -- case management.

Case management was the core function which distinguished the demonstration projects from being simply a variety of reimbursement schemes or collections of service offerings which were usually not available. It was the force behind the demonstration that set it apart from the uncoordinated or unplanned care more typical of the existing long-term care service network.

A discussion of case management is included in this chapter because it was a major method for implementing case projects' intervention strategy. Documentation and analysis of case management practices in the HCFA demonstrations are found in the project case studies of this report (Appendix B), in BPA's Preliminary Report on Work in Progress (October 1982), and in the study of the costs of case management in selected demonstration projects (Chapter 6 and Attachment 1). A brief summary of the relationship of case management to projects' intervention approaches is provided here.

Basically, there was a general agreement across projects on the nature and purpose of case management and the tasks that made up the process. Case management was considered both an administrative service that directed client movement through a series of phased involvements with the long-term care system,³ and as an advocacy service which protected the rights and wishes of clients during their interactions with both informal and formal care providers. Essentially, all projects provided all clients with the following elements of the case management service:

- screening,
- intake,
- assessment/reassessment,
- care planning,
- service arrangement, and
- monitoring/counseling.

As might be expected, each project developed its own unique style in administering case management to clients. The four types of case

management variation found among the HCFA demonstration projects are summarized below.

(1) Degree of Specialization

There were differences in the ways that projects organized their case management processes. Traditionally, in social service agencies clients are assigned primarily to one case worker who performs all case management tasks for a given client; this may be described as the case-work approach to case management. A second approach involves allocating case management tasks to different people according to the professional discipline and educational level required. This may be described as the "specialized" approach to case management. Casework projects, in which a key staff member performed all or nearly all case management tasks for a client included: South Carolina CLTCP, On Lok CCODA, Oregon FIG/Waiver, Project OPEN, Wisconsin CCO in Milwaukee, Triage, Florida Pentastar, and MSSP. In specialized projects, no one person was responsible for all case management tasks for a given client. Instead, individual staff members were responsible for one or more discrete functions, but did not concern themselves with all aspects of care. Specialized projects included: Georgia AHS, New York City HCP, Wisconsin CCO in LaCrosse, ACCESS, and San Diego LTCP.

(2) Professionalization

Another distinction among projects was the level of case management staff professionalization. The term "professionalization" is used here as a global concept which denotes the level of education, training or certification obtained by the persons performing the various case management tasks: (a) Non-professional: includes clerical and secretarial positions, high school graduates, bachelor's degree in any subject not directly related to the type of service the staff person is performing; (b) Professional: training to certification level or bachelor's degree in a field directly related to the case management service; and (c) Advanced Professional: specialized education or training beyond the bachelor's degree.⁴

Overall, only a few projects were highly professionalized, employing a high proportion of nurse practitioners or nurse clinicians, master's level nurses, MSWs, psychiatric social workers, and rehabilitation therapists (Triage, On Lok, and San Diego LTCP). By the same token, only a few projects made extensive use of non-professional staff (Florida Pentastar, Georgia AHS, and New York City HCP). Positions at most of the projects were filled by staff who met the requirements to be classified at the professional level in our scheme. These were typically bachelor's level social service workers and nurses, including public health nurses, BSNs and RNs.

It appears there was agreement among the projects about which professional disciplines were minimally required for a case management system in long-term community-based care: nursing and social work. It also appears that there was less consensus about the need for involving more highly trained professionals as regular, full-time staff members. Despite this lack of consensus, advanced professional staff comprise part of the case management team at a majority of the projects.

(3) Cost Containment Mechanisms

Case management was a crucial element in cost considerations. It was important in two ways: (1) costs were generated in the delivery of case management itself (see Chapter 6 and Attachment 1), and (2) cost management served as a mechanism to control service utilization. All the projects were concerned with cost reduction and hoped to demonstrate that community-based long-term care services were either no more expensive or less costly alternatives to institutional care. For most projects, this analysis was carried out retrospectively as part of their research designs.

However, five projects (ACCESS, South Carolina CLTCP, Oregon FIG/Waiver, Georgia AHS, and MSSP) carried out some form of service plan costing as part of their case management processes. All five projects compared clients' projected community and institutional service costs using a fairly similar approach (i.e., creating a "cap" or limit for care plans), but with calculations based on different sources of community services and different levels of institutional care. ACCESS and

the South Carolina CLTCP attempted to keep clients' community costs at 75% of institutional cost, although, with authorized approval, service cost could vary up to 110% of institutional care for ACCESS and up to 200% for South Carolina. Oregon FIG/Waiver also aimed for care plans at 75% or less of institutional cost, but differed from ACCESS and South Carolina CLTCP in that the calculation was done after services had been delivered. Georgia AHS set cost limits based on number of allowable service units per month (about 85% of the average ICF/SNF monthly payment by Medicaid) which was the equivalent of \$450 by the end of the demonstration period. MSSP care plans costs were held to a dollar amount (\$505 per month, which was 70% of SNF cost), with possible increases to \$1,050 for limited time periods.

(4) Authorization of Level and Locus of Care

Only two projects, ACCESS and South Carolina CLTCP, were based on preadmission screening of potential applicants to nursing homes. Because of their control over institutional services utilization, the projects' authority to determine locus (i.e., in home, institution, etc.) and level (based on the intensity and type of service required) of care takes on increased significance. The existence of these projects in their communities created an altered system of long-term care, whereby no one receiving Medicaid dollars could be admitted to a nursing home without being assessed by the project. These projects cast a "net" over a broad segment of the population and targeted among the most impaired aged of all the HCFA demonstration projects. Since ACCESS and South Carolina CLTCP intercepted the frail aged as they applied for nursing home entry, they had a high likelihood of diverting people who, but for the demonstration, would use nursing home services.

PROJECT DESCRIPTIONS

This section presents summary descriptions of the 13 demonstration projects included in the national evaluation. Complete descriptive information about the projects is found in other reports completed by BPA as part of the overall national evaluation. Detailed case studies

for selected projects are in the six volumes of Appendix B to this report.⁵ Analyses of environmental characteristics (e.g., demographic characteristics, Medicaid and Title XX programs, institutional resources, alternative long-term care service availability, and major problems in long-term care) were undertaken in an earlier evaluation report.⁶ Case management practices, staffing, and roles were also analyzed in this report. The waived services provided by each of the 13 projects are discussed and compared in Attachment 2.

Long-Term Care Project of North San Diego County

Background

The Long-Term Care Project (LTCP) served the North County section of San Diego County, a 910 square mile area which includes the north part of the city of San Diego, several small cities and many rural communities.

The number of acute hospital beds in San Diego County was considerably below the national average in 1978. Although the number of nursing home beds in the county is above the national average, the number of beds in the project service area was the lowest of any of the demonstration projects in 1976. North San Diego County was relatively well supplied with alternative long-term care services. However, the area was resource poor for some service types including adult day health care and social day care. Inadequate public funding for transportation made service widely inaccessible.

Data were gathered from several major community service providers concerning identification of problems within the long-term care system in the project's catchment area. The majority of those interviewed considered the most important long-term care problems to be: lack of nursing home beds, lack of financial accessibility to alternative services, physician attitudes toward community-based services and lack of appropriate housing for the elderly. In addition, the project's grant application to HCFA cited the lack of a local unified and coordinated system of care.

Intervention Approaches

A private non-profit home health agency sponsored this Medicare 222 demonstration project, which served a small sample of the entire eligible population in its very large sub-county catchment area. The project goal was to demonstrate that a home health agency, with a range of supplementary in-home supports and a system of community linkages, could be an appropriate and cost-effective resource to administer a long-term care system. In addition, the project aimed to assist the frail elderly

in achieving and maintaining functional independence, thereby reducing the incidence of acute episodes that require institutionalization. In order to implement this goal, project planners selected an intervention strategy that was designed to upgrade the existing home care package. The Long-Term Care Program was a broker of services, providing only case management directly to clients. Six additional waived services were delivered by contract providers including services of the host agency. The project was the only demonstration to receive a "teaching waiver" for client and caregiver education.

Operations

The sponsoring agency was Allied Home Health Association, Inc. (AHHA)/Allied Community Services, Inc. (ACS). LTCP's target population was composed of those catchment area residents deemed "at risk." At risk was defined as: those persons 65 and older who were in need of intensive or intermediate levels of home care as a result of a prior hospital admission; those who were in need of health or social support services at the intermediate or intensive level in order to avoid inappropriate placement in a long-term care facility; and those who required services at a maintenance or basic level of care in order to remain in their homes. This definition translated into three specific eligibility criteria: permanent residence in North San Diego County; age 65 or older; and Medicare-eligible. In addition, clients had to meet at least one of the following conditions: unable to maintain self at home without assistance in ADL; at risk of long-term institutional placement; subject to acute exacerbation of a chronic disease; at risk of frequent hospital admissions; had received home health services for unstable health condition, stabilized but required education and monitoring to maintain a stable state; or had a stabilized chronic or non-homebound status which restricted them from receiving traditional home health services, but were in need of long-term care services.

In addition to the case management services provided directly by project staff, six additional waived services were delivered by contracted agencies. Waived services included home health (nursing, social work and therapies), homemaker services, patient teaching and monitoring (the LTCP was the only demonstration with this waiver), adult day health care, social and medical transportation, and home-delivered meals.

Case Management

Case management was defined by the project as a "process through which appropriate staff maintain contact with the participant, his or her family, and providers of service on a regular basis in order to ensure that the services are appropriate and are meeting the participant's current needs." This service was provided by multi-disciplinary care planning teams which were made up of a service coordinator (M.S.W.), a nurse practitioner (R.N.), and an occupational therapist (O.T.R.). Service coordinators functioned as case managers and carried caseloads that averaged between 37 and 46 clients. The San Diego project was one of the few demonstrations that employed a high

proportion of advanced professionals (i.e., at the Master's level and/or with specialized training). The project carried out a random assignment to treatment and comparative groups.

Termination

The project stopped accepting new clients in February 1982. Waivers were extended by HCFA through December 1983, but all clients were terminated as of September 30, 1983. Although the project was unable to secure continued or permanent funding, staff reported several major accomplishments. The demonstration tested the efficacy of a home health agency as a site for coordinating community-based long term care; informed local physicians, other health providers, political leaders, and the general public of the need for community-based services; and contributed to further research in the field of long-term care by developing a valid and reliable data base on client service utilization and functional status.

New York City Home Care Project

Background

The Home Care Project (HCP) served four boroughs in New York City: the Bronx, Brooklyn, Queens and Staten Island. Three of the four boroughs served by the project were below the national average for the number of acute hospital beds per 1,000 residents. The number of nursing home beds per 1,000 aged in the service area was considerably below the national average. The city as a whole had a relatively generous supply of alternative care services for the aged. For those who met the Medicaid, SSI and public assistance eligibility criteria, there was an extensive home care service through the Human Resources Administration. Additional home care services were provided by the Visiting Nurses Association, the Department on Aging, and Community Services for the Elderly, a state funded program targeted to the frail elderly to help them remain in their homes and avoid institutionalization.

Many of these services were available to the Medicaid eligible. However, the near-poor, who experienced severe economic difficulties but did not qualify for Medicaid, were generally underserved due to financial barriers. For example, Medicare clients with chronic illnesses and disabilities who needed in-home services were not entitled to coverage unless they met restrictive conditions. Project planners perceived the major problem in the long-term care system to be the poor accessibility to services for this group, as a result of a lack of public funding. Transportation and home care were viewed as the most critical service gaps.

Intervention Approach

The major goals of the project were to: 1) upgrade the home care service package available to clients by improving the coordination of

care delivery through case management; 2) provide and test a model of more appropriate and cost-effective care; and 3) to maintain or improve the functional level of clients thereby promoting independent living. The Medicare 222 waiver authority was granted to the project through New York City's Department for the Aging from November 1979 through March 31, 1984. It was unique among projects included in the national evaluation in that it was the only one sponsored by an Area Agency on Aging. Project operations were carried out at four sites located in separate catchment areas within the city. All of the site-level host agencies were private, non-profit organizations; two were hospital-based community health clinics and two were social service coordinating agencies. Each site served a very small sample of the eligible population. The site host agencies provided few or no services to project clients and none provided waived services. Two sites provided physician services to a small proportion of clients; two provided information and referral; and one operated a senior center that sometimes provided meals to clients.

Operations

Project planners defined those most in need of project services as homebound, chronically ill elders in need of moderate levels of services (similar to those provided by Medicaid), whose resources (assets and income) were above Medicaid eligibility standards but too small to pay for private home care on a continuing basis. Specific eligibility criteria required: residence in one of the four service area boroughs; age 65 or over; and enrollment in Medicare Part B. In addition, clients were required to be chronically ill, functionally impaired and/or mentally disabled to the extent that they needed assistance to go out of doors or up and down stairs or with personal care needs (i.e., one to 20 hours of personal care services per week).

Although the project aimed to ensure the delivery of a spectrum of services to homebound clients, there was a major focus on a limited number of specific waived services identified as critical to achieving project goals and inaccessible to the project target group in the existing system of care. These services included: homemaker/personal care services; non-emergency transportation and escort; and prescription drugs and biologicals. Only case management was provided directly by project staff. The waived services were provided on a contract basis through community providers.

Case Management

The project was one of three in the cross-cutting evaluation to make extensive use of non-professional staff (i.e., high school graduates, Bachelor's level in a subject not directly related to the actual service being performed) in the case management process. The case management style employed was also "specialized" in that no person was entirely responsible for all aspects of case management for a given client. Some case management tasks were shared among staff members. For example, assessment and care planning were carried out on a team basis. However, other tasks were unique to one member. Only the case

manager was responsible for service arrangement, monitoring and interim care plan modification. Project staff felt that this demonstration developed a case management system that was well suited to its small scale and its limited system intervention and impact objectives. The goals of the Home Care Project's case management system were straightforward: to assist clients and their families in entering the community service system from one central intake point and to find clients the most appropriate array of existing and waiver-expanded community services.

Monroe County Long-Term Care Program, Inc. (ACCESS)

Background

The ACCESS project serves Monroe County, an area which includes the City of Rochester as well as several suburban and rural communities. Monroe County's 3.6 acute hospital beds per 1,000 population is well below the national average and is the next to the lowest among the 13 projects. For nursing home beds, on the other hand, the county's supply is above the national and state averages. The network of noninstitutional long-term care service providers in Monroe County is highly developed compared to most areas in the country.

The major problem addressed by the project is the high utilization of administrative care days in Monroe County's acute hospitals, e.g., where patients in need of long-term care "back-up" in acute facilities waiting for placement to become available. The problem has been attributed to a lack of coordination between Medicaid and Medicare programs, low Medicaid reimbursement rates for nursing home care, and the reluctance of facilities to take heavy care patients. Monroe County's long-term care system is also plagued by many of the same problems facing communities across the country: increasing Medicaid expenditures, lack of reimbursement for noninstitutional long-term care services for non-Medicaid patients, gaps in the availability of these services, and problems with fragmentation and coordination.

Intervention Approach

ACCESS first received Medicaid waivers in 1975, and additional Medicare waivers were granted in 1980. The project scale of intervention is categorized at the "population" level. That is, its pre-admission assessment and case management services are available to all adults in Monroe County who have long-term care needs.

The project's intervention strategy is focused on controlling client access to and utilization of institutional services with an overall goal of containing public expenditure for long-term care. This is accomplished through the project's pre-admission screening and case management process, the assessment component of which is contracted out. ACCESS has formal contracts with providers for waived services and non-waivered services it orders as broker for the county Medicaid and Medicare programs. The project does not provide client services directly.

The project is particularly concerned with reducing the number of administrative hospital days for Medicaid and Medicare patients, as well as reducing the use of nursing homes and encouraging home care utilization. At the service level, ACCESS seeks to improve coordination among all long-term care providers and to increase the availability of community-based services, while also improving the efficiency with which institutional services are used. At the policy level, the goal of the project is to control the long-term care system by placing approval for all public payments for long-term care in a single independent agency.

Operations

ACCESS, which is administered by the Monroe County Long-Term Care Program (MCLTCP), began program operations in December 1977. Comprehensive assessment (pre-admission screening), pre-placement counseling and case management have been made available to all Monroe County residents over the age 18 in need of more than 90 days of long-term care. In 1978, ACCESS became the reimbursement authority for all long-term care services, both institutional and community-based, for Medicaid recipients in the county. In addition, the Medicaid waivers were made available to eligible clients for seven expanded community services not previously covered by the New York State Medicaid program: friendly visiting; housing improvement; home maintenance; housing assistance; transportation; moving assistance; and respite care.

In 1980, 222 waivers were granted to ACCESS in order to permit expansion of the project's authority and special community services to the Medicare population. ACCESS II, the combined Medicaid/Medicare project, became operational in November 1982. The Medicare component adds three new elements to the original program: 1) a nursing home benefit is designed to encourage nursing home operators to admit heavy care/high cost back-up patients through special reimbursement rates. The intention was that the rates would be high enough to induce nursing homes to accept these patients. ACCESS also obtained a "sudden decline" provision to reduce the frequency of temporary admission of nursing home residents to acute hospitals; 2) a "SNF without Walls" benefit is intended to stimulate the use of home care services, freeing up nursing home beds and reducing potential back-up. Clients at the SNF level of care may be served at home with deductibles and coinsurance payments eliminated. The service package includes: respiratory therapy, home health and personal care aide service, medical and non-medical transportation and rental or purchase of medical equipment and supplies. ACCESS also increased the frequency of level of care certification in skilled nursing facilities in the hope that the increased review combined with the expanded home care service package will encourage patients to return home; and 3) traditional Medicare eligibility for project clients was expanded. The requirement that nursing home residents need daily skilled nursing or skilled rehabilitation and home care clients need intermittent skilled nursing or therapy has been waived. Under the new criteria, clients may qualify if they also demonstrate an "aggregate of unskilled need requiring skilled supervision."

Case Management

Case management at ACCESS is a five step process (case finding, assessment level of care determination, service planning, monitoring, and reassessment). The system appears very similar in both ACCESS I and II, although procedures may be modified during the course of the combined project to accommodate inclusion of Medicare clients. Referrals to the program come from either community or institutional settings and are screened by the ACCESS intake coordinator. Assessments are not carried out by project staff. Depending on the referral source, assessments are carried out by home health agency nurses, hospital nurses, hospital social workers, or nursing home staff. A physician completes a medical work-up or summary. These assessments are reimbursed by the ACCESS project.

After an assessment is completed, the ACCESS case manager certifies the level of care needed by the client. The case manager then works with the assessor and client to determine the best site for the client to receive care. A service plan is completed for all clients for whom home care services are recommended, and any differences of opinion between the assessor and case manager are negotiated. An ACCESS case aide computes service plan costs. Although assessment is provided without charge to all clients, reimbursement for direct services is based on the client's medical/financial eligibility. The case manager can approve Medicare or Medicaid payment for eligible clients' home care services up to 75% of the equivalent level of institutional care. Care plan costs that fall between 75%-110% must be approved by on-site monitors from the Monroe County Department of Social Services. If costs exceed 110%, the care plan must be approved by the county Deputy Director of Medicaid.

Continuing Efforts

Currently the ACCESS Medicare project is projected to run through mid-1986 and the Medicaid waivers have been extended through September 1986. Beyond that, ACCESS staff are exploring a number of options for the future, including permanent county and state support, privatization, or a private-governmental arrangement.

South Carolina Community Long-Term Care Project (CLTCP)

Background

The Community Long-Term Care Project (CLTCP) served a three county region in the northwestern section of South Carolina. The region was principally rural and, compared with the United States as a whole, was relatively poor. Approximately 17% of all individuals had incomes below the poverty level in 1980 with 22% of those over 65 below the poverty line. The CLTCP catchment area had the lowest per capita income among the 13 project communities and the next to highest percentage of population below the poverty level.

Two of the three project counties were federally designated health manpower shortage areas and the catchment area had far fewer physicians per 1,000 population than any of the other projects. The area was also low in nursing home beds per 1,000 residents over age 65. However, it was relatively well supplied in terms of acute hospital beds. Although the CLTCP catchment area was resource poor in terms of long-term care services in 1977, it did possess a foundation of providers for expansion in this field. The two major problems perceived by CLTCP planners in South Carolina's long-term care system were the rapid growth in Medicaid nursing home expenditures and the lack of availability of community long-term care services.

Intervention Approach

The overall goal and intervention strategy of the CLTCP was to develop a method for controlling access to and use of institutional long-term care services in order to contain public expenditures for nursing home reimbursement. In order to achieve this goal, the project created an assessment and pre-admission screening process with service planning, service management and the addition of community-based services. Its scale of intervention was at the population level, since it implemented mandatory pre-admission screening of all Medicaid eligibles in a multi-county area seeking nursing home care. Medicaid waivers were obtained from HCFA in July 1980 to run through June 30, 1984. The waivers enabled the project to offer the new and expanded services to those persons with incomes above the categorical limit who normally were eligible for Medicaid only if institutionalized. Six services were provided via formal contracts; all other client services were obtained through the traditional long-term care system (although Medicare waivers were secured in April 1983 as well). Cost containment was implemented through a service plan cost cap developed for each client.

Operations

The host agency for CLTCP was the South Carolina Department of Social Services (DSS) which is the Medicaid agency for the state. The target population for CLTCP consisted of all Medicaid-eligible adults over the age of 18 living in the three county project area who were sufficiently impaired so that they required long-term care services. Individuals were seen as having a need for service when they were at the skilled nursing or other long-term care facility level as defined by Medicaid criteria, or when they were ranked as dependent in at least two activities of daily living. Admission criteria changed during the course of the project. At first, applicants at the "less than ICF" (intermediate care facility) level were accepted. After August 1982 these applicants were no longer eligible for service.

No services other than case management (service management) were offered by CLTCP. Formal contracts with providers were negotiated for the provision of newly-developed waived services and for the expansion of previously existing services. The newly developed services were covered by the waivers and purchase of service contracts included: personal care, medical day care, respite care, home delivered meals,

medical social services, and home based therapies (occupational, physical, and speech). Expanded services covered by the waivers were in-home mental health counseling and a specified number of home delivered meals.

Case Management

Service management, as CLTCP referred to its comprehensive case management process, was provided by four service management teams consisting of a nurse social worker, and one or two case workers (these two are referred to as service managers). Each service manager carried a caseload of 75 to 85 cases. Compared to the other demonstration projects, CLTCP case management staff were lower in professionalization in terms of training, degrees and specialized education. The team was responsible for assessment, reassessment, service planning, service authorization and case management.

Following assessment, team members together made a determination of level of care in consultation with the applicant's physician. Level of care categories changed during the duration of the project, but were finalized as skilled, intermediate or less than intermediate level of care. After this determination was made, applicants were randomly assigned to either the experimental or comparative group. The team then made a locus of care recommendation for experimental clients. Service location was designated in an institutional or community setting; however, level of care did not always determine locus of care. An experimental client certified for ICF may have had "home" as the recommended location, depending on the client's condition, informal supports, availability of services, service cost, the doctor's recommendations and the client's and caretaker's preference.

An important factor in the development of client service plans was the cost cap. This stipulated that the cost of the "expanded" services (those newly developed services provided via waivers) under Medicaid was restricted to no more than 75% of the cost of institutional placement at the same level of care. Only the cost of waived services were used in calculating the comparison to institutional care, although the service plan included waived and non-waived services. No client was excluded from community services because of the cap. The cost cap was exceeded only rarely during the project.

Expansion to a Statewide System

One of the most notable achievements of CLTCP has been its success in obtaining a commitment from the state for statewide expansion. By the fall of 1982, CLTCP already had state funding for the full statewide operation of pre-admission screening. Obtaining funding was the first step toward statewide implementation of the entire CLTCP system, including the provision of service management and access to an expanded set of community-based services for all individuals at a skilled nursing facility (SNF) or intermediate care facility (ICF) level of care. The final implementation -- the offering of expanded community-based services to all project clients and expansion of regular Medicaid

eligibility -- is scheduled for July 1984, subject to approval by the state legislature.

The statewide CLTCP system will be somewhat different from the demonstration project. Under the new statewide system, an applicant must not only be eligible for care at the ICF or SNF level and be Medicaid-eligible, but also must be already tapping into Medicaid as a reimbursement source. In addition, only clients who choose to remain at home will receive ongoing service management from the CLTCP system staff. Clients will be discharged when they enter a nursing home or are no longer at an ICF or SNF level of care. Project re-entry can be triggered as soon as circumstances change to make the client once again appropriate as a service management case.

Project OPEN, San Francisco

Background

A single site Medicare project, Project OPEN serves a community with a relatively ample supply of long-term care services and a relatively poor supply of alternative intermediate-level institutional long-term care. For example, there are 20 general acute care hospitals in San Francisco, providing over 7,000 beds for a ratio of 10.9 beds per 1,000 population. Similarly, the city has almost 500 physicians per 100,000 population, one of the country's highest physician-to-population ratios. In addition to these acute care resources, the city also benefits from the sizeable number of private and public social service agencies involved in the development and dissemination of innovative service strategies for the aged. In contrast to this abundance of acute care facilities and innovative social services, the city faces a severe shortage of long-term care beds.

Project OPEN planners noted that certain services were still unavailable to the elderly (e.g. money management) and that many groups among the elderly were underserved because of financial, cultural, or geographic barriers. The total lack of ICF beds and the severe shortage of SNF beds were also cited as major problems. However, they found the lack of coordination among the many service providers to be the largest problem in the city's long-term care system.

Intervention Approach

Project OPEN's major goal was to design and implement a comprehensive long-term health and social service delivery system for a population of "at risk" elders. The project sought, through case management, service coordination and the provision of previously limited or inaccessible services, to allow clients to remain in the community and reduce unnecessary institutionalization. The project focused on upgrading the home care intervention strategy.

Medicare waivers were granted to Project OPEN. The project was administratively housed in the Geriatric Services Department of Mount Zion Hospital, a major teaching facility and gerontological center, and

was organized as a consortium with five other health and social service agencies. Project staff provided only case management directly to clients. They coordinated the delivery of a wide range of services from the hospital (including acute care), consortium agencies and other contracted service providers.

Operations

Project OPEN targeted its services to those elderly who fell within the "middle" range of frailty. The project served a small segment of the aged population. Individuals without any functional or independent living problems were not appropriate, nor were those very frail aged close to institutionalization. Thus, the project's intended clients were those individuals living in the community and in need of community services. Eligibility criteria for project participation included: residence in the catchment area; age 65 or older; eligible for Medicare Part A and B; aware enough to respond to questions in assessment process; and must have a problem focus and require assistance to live independently. In addition, clients had to have met one of the following "risk" conditions: had an acute care hospitalization in the 30 days; had a skilled nursing hospitalization in the last 30 days; suffered a major life crisis in the last year; require personal care; or be judged by the interviewer as having difficulty with independent living.

Project OPEN offered a wide spectrum of services, including acute care, nursing home care, physicians' services, day health, home health, senior center programs, meals, homemaker-chore service, transportation, and many others (see Attachment 2 of this report for a complete list). The host agency, Mount Zion, provided acute in-patient care, day health, dental services, health screening, home health, mental health care, outpatient clinic services, pharmacy, and social day care directly to clients. Most other services were provided by the five consortium agencies.

Case Management

Case management at Project OPEN was provided by the service coordinators (professional level R.N.'s and M.S.W.'s) and aided by the Case Conference Team (the service coordinator, one or more physicians, and post-graduate fellows in geriatric medicine at Mount Zion). Service coordinators were the key staff members performing most case management tasks. Applicants were initially screened for eligibility and then randomly assigned to experimental and comparative groups.

Further Developments

Beginning in November 1982, Project OPEN began terminating experimental and comparative clients. In each case, efforts were made to refer clients to agencies that might be able to continue provision of necessary services. All clients were terminated by June 1983. Research activities continued through September 1983.

In January 1984, Project OPEN resumed operation with funding from the Robert Wood Johnson Foundation. Essentially, the same set of case management services and facilitated service delivery are offered, targeted toward the same client population. The project plans to make more use of para-professionals in case management, decrease its emphasis on research, initiate a two-tiered case management system, and create a closer relationship with Mount Zion. In Project OPEN's staff efforts to disseminate design and findings, they have noted that any attempt to reproduce the project's approach with a more frail population should be approached with caution.

On Lok Senior Health Services Community Care Organization for Dependent Adults, San Francisco

Background

San Francisco has the highest number of acute hospital beds per 1,000 population of any of the project communities, but it is well below the national average in nursing home beds. This shortage, coupled with the fact that there are no intermediate care facilities, results in Medicaid recipients often being placed in institutions a considerable distance from their home communities. The city has a long history of innovation in community-based long-term care, especially in social services, and many neighborhoods are relatively well supplied with these services. Over 400 agencies provided services to the elderly in 1982. However, the On Lok catchment area was not as richly supplied as some other areas. Prior to project initiation, there was a shortage of home-delivered meals and transportation in the area, and there was no adult day care. In addition, a majority of the elderly in the project's service area were Chinese, Italian or Filipino and, since many of them were foreign-born, had difficulty using services provided by agencies that were not bilingual and bi-cultural.

Planners for On Lok's initial phase (before the HCFA waivers) identified the long-term care problem in Chinatown/North Beach as a lack of institutional long-term care facilities. Further research led to a rethinking of this approach and the realization that it was a lack of alternative services and coordination among existing services that were the essential problems.

Intervention Approach

On Lok, while undergoing a series of phases in its development, has maintained continuity in its philosophy and goals. On Lok intends to provide, through one organization, the full range of health and social services needed to maintain frail elders in the community as long as possible. At the client level, achieving this goal means providing services necessary to rehabilitate and maintain the functional level of clients. At the system level, it requires consolidating the full continuum of care into one delivery system with most services delivered by the same professionals planning them.

Extensive Medicare waivers were granted to On Lok from February 1979 through November 1, 1983 to establish the Community Care Organization for Dependent Adults (CCODA I). Like the other demonstration projects, On Lok coordinated traditionally separate long-term care services. However, the CCODA is different in its scope and method of service delivery. Under the CCODA intervention strategy, all needed services, including in-patient care, are consolidated into one single agency. This "consolidated" model of long-term care which utilizes the reimbursement principles of a health maintenance organization (HMO) is unique not only among the demonstrations, but in the entire country.

A small portion of the eligible population in the project's sub-county service area is provided an extensive array of long-term care and acute care services. Most of these are provided directly by project staff, with very few being contracted out to other local service providers. For its clients, On Lok exercises almost total control over service utilization and institutionalization.

Operations

The CCODA program is unique in that it provides all the health and social services needed by its clients, directly or through contract arrangements. A very comprehensive package of services is available directly from in-house project staff -- more than in any of the other demonstrations. Only acute care, skilled nursing in-patient care, physician medical specialties and some medical equipment are provided by contract. Project services also include: physician services, nursing, therapies, recreation, social work, meals, transportation, day health, personal care, homemaker services and respite care.

One of the most unique features of the CCODA program is its method of reimbursement. The technique for calculating project reimbursement is based on the capitation rate method similar to that utilized by HMOs. The original proposal called for a system in which On Lok would have been paid a fixed monthly rate for each enrolled participant regardless of the amount or types of services used. On Lok would have then been "at risk" to meet all the service needs of participants using this allowed reimbursement. Instead, monthly payments are based on a proposed capitation rate, but with adjustments to meet actual costs. CCODA planners felt that the program would reduce participant costs, as compared to the traditional long-term care service delivery system, through this innovative reimbursement methodology, combined with the project's emphasis on providing alternative community-based care.

Case Management

Case management at On Lok is provided by the Intake and Assessment (I & A) team. This multi-disciplinary group is central to the operation of the CCODA program and is responsible for assessment, authorization and provision of care to the participants. The team is composed of health care professionals in the areas of medicine, nursing, social work, occupational and physical therapies, and nutrition. Team meetings are attended by as many as ten to 20 staff members. Although On Lok

does not designate a single "case manager", the social worker who initially evaluated the participant functions as the team leader and acts as that individual's counselor, advocate and case coordinator. On Lok is one of the few demonstration projects to utilize a highly "professionalized" case management staff. (i.e., many members with advanced degrees and specialized clinical training).

Further Developments

The Medicare waivers for the CCODA program were originally scheduled to end on January 31, 1983. However, from mid-1982 on, efforts were made to find continuation funding and a unique solution was found. An amendment to the Social Security Act (1983) was introduced which mandated the Secretary of Health and Human Services to authorize waiver applications under Section 1115 and 222 as requested by On Lok. This new funding authority, set to run for three years, will create the risk-sharing, capitated model envisioned for the CCODA I, but never implemented. This means that On Lok, via the CCODA II, will now be "at risk" to meet all the service needs of participants based on a fixed monthly amount per participant.

Florida Pentastar Project

Background

The Pentastar project served a five county area that was, on the whole, highly urbanized. The project catchment area ranked first among the demonstration projects both in percentage of the population over age 65 and the percentage over age 75. The state of Florida is widely recognized as having one of the largest elderly populations in the United States, and immigration of those in retirement has been a major factor explaining this high concentration.

Availability of long-term care services in the project catchment area varied by county. In general, many long-term care services were available, but public financing to pay for them was limited. The four highly urbanized Pentastar counties had a relatively good supply of homemakers, home health, meals and medical transportation. However, many of the alternative services were in short supply in the one less urbanized county. Non-medical transportation and adult day care were virtually unavailable in all project counties. In terms of acute hospital beds, Pentastar counties were at or above the national average of beds per 1,000 population in 1978. By contrast, in the project service area, the number of nursing home beds per 1,000 aged residents was considerably below the national average in 1976.

A major problem perceived by Pentastar planners was the lack of coordination between the different programs funding long-term care services and the gaps that existed in the continuum of services, particularly for the poor, in certain rural areas of the state. This situation was exacerbated by the large influx of elderly who lacked family supports because they moved to Florida for their retirement

years. This situation created a high level of demand for formal services. The contribution of long-term care services to the increasing cost of the state's Medicaid program was another major issue in Florida.

Intervention Approach

The Pentastar Project was an outgrowth of the state's community care philosophy and belief in the need for innovative programs to accommodate the rapidly increasing aged population. The overall goal of the project was to help elderly residents remain in the community through health and health-related services. Because poor coordination and service gaps were perceived as the major long-term care problems, the Pentastar project intervention approach aimed to coordinate the existing long-term care delivery system and fill gaps in the continuum of alternative services. This goal was accomplished through the authority of Medicaid waivers which were awarded from September 1980 through December 31, 1983. There were five project sites serving a small proportion of the eligible population across multiple counties. Case management was offered as a direct service; all other services were contracted for or received on a non-waiver basis. Pentastar did not attempt to formally regulate community-based service costs, although it did have as a goal an analysis of the project's impact on cost effectiveness.

Operations

Pentastar was sponsored by the Florida Department of Health and Rehabilitation Services (DHRS) and housed in the Department's Aging and Adult Services Program Office. Pentastar's target population was catchment area residents, 60 years or older, who were Medicaid-eligible and at risk of institutionalization within 12 months based on initial assessment. Individuals over age 70 and on SSI were high priority groups. The project sought to divert aged persons from institutionalization by intervening before their physical functioning and social support status deteriorated to the point where nursing home application was made. Thus, clients were selected from community settings and were in need of community-based services.

Pentastar staff provided no direct services other than case management. Each Pentastar site had formal contracts for waived services which included: a comprehensive medical/social assessment (CMA), with a complete physical examination and laboratory and radiology work-up if needed; medical therapeutic services (physical, occupational and speech therapies, and audiology); personal care; specialized home management; day treatment services; respite care; medical transportation; and durable medical equipment.

Case Management

Pentastar defined the case management process to include initial intake, arrangement for the comprehensive medical/social assessment, development of the care plan, arrangement of designated services and monitoring of services received. Care managers were responsible for

case management and carried a case load of about 35 to 40 clients each. Florida was one of the few projects to make extensive use of non-professional staff to implement the case management function. Only assessment, reassessment and care planning were handled on a team basis, with a nurse and physician participating with the care manager. Other case management functions were handled by the care manager with oversight from the care manager supervisor. Because Pentastar clients interacted primarily with one worker throughout the project period, Florida can be classified as having utilized a less specialized, case-work model of case management.

Termination

Pentastar closed client intake in April 1982. Client termination began in September 1983 and was completed in December 1983. Most clients were absorbed into the Community Care for the Elderly (CCE) program, or in one county, the Alternative Health Plan, a state Medicaid demonstration project. Pentastar staff believed that most CCE programs offered a lower level of care than Pentastar and estimated that former clients would receive approximately one-third to one-half the level of home health aide and homemaker services that they received under the demonstration.

At its inception, the State of Florida intended Pentastar to be a limited duration demonstration. During the course of the project, the conversion of Pentastar into a permanent state program gained adherents and was proposed by Aging and Adult Services in early 1982. However, testimony in district hearings was mixed. Pentastar was perceived by some as duplicative of the CCE program and also as too costly. Funds budgeted for Pentastar's state expansion were not allocated based on the district hearing testimony.

California Multipurpose Senior Services Project

Background

The Multipurpose Senior Services Project (MSSP) is a statewide demonstration with eight sites in six counties selected to reflect the enormous diversity of the state in terms of socio-demographic characteristics and health care resources. Six project sites are in major urban areas, one site is located in a small city and another served a rural community.

All the MSSP counties except San Francisco are below the national average for number of acute hospital beds per 1,000 residents. Four of the six counties are above the national average for number of nursing home beds. Availability of alternative services varies significantly among the eight project site communities. Two sites, San Francisco and San Diego, are located in communities with highly developed networks of community-based services for the elderly. At the other extreme, East Los Angeles and Ukiah have severe shortages or no providers at all for several major alternative services. Overall, the most common service

gaps among the sites are transportation, home-delivered meals, social day care and adult day health care.

The MSSP project was designed to address two major problems. First, the state's long-term care system is highly complex and fragmented. The lack of coordination within the system has caused secondary problems with access to services and inappropriate placements in nursing homes. Second, the state is experiencing substantial rising costs for nursing home care and a method is needed to help control these costs.

Intervention Approach

As state-initiated and -sponsored project, MSSP has a strong emphasis on system-level goals which include: reducing public expenditures for health and social services; coordinating the long-term care delivery system; filling service gaps in the continuum of care in certain geographic areas; and testing a model of care which could provide a basis for a statewide delivery system. MSSP also aims to provide a single point of entry to a continuum of care for the aged, reduce nursing home and hospital utilization, and improve the functional abilities of clients to promote independent living.

Medicaid waivers were approved from October 1979 through April 1983. Each of the eight sites, coordinated through a central office within a state agency, serves a small sample of the entire eligible population in eight separate catchment areas throughout the state. The project utilizes a brokerage model of service delivery and therefore depends on other agencies to provide services (except case management) to clients. Some services are provided directly by the host agencies, depending on the nature of the site.

Operations

Authority for MSSP resulted from California State Assembly Bill 998 passed by the Legislature in 1977, with funding for the waived services covered by the Section 1115 Medicaid waivers. The project is centrally administered by a special unit of the State Health and Welfare Agency. Project sites are responsible for the delivery of services and abide by the administrative policies and procedures of host agencies. Five of the sites are affiliated with private nonprofit organizations and three with public agencies.

The target group for the project is "the frail and at risk elderly." All clients are required to live in a project catchment area, be 65 years or older and be Medicaid eligible. To ensure a varied mix of clients and meet the project's research demands, sites were instructed to phase in their case load in a specific sequence, with each phase emphasizing a different set of target criteria. Those accepted as part of the community sample, 50% of the client caseload, had to meet at least one of the following conditions: about to be placed in an SNF; recently placed in a SNF; recently hospitalized; about to be discharged from an SNF; age 75 or older; judged by the project assessment team to

be disoriented; or recently lost a spouse or long-term residence. In addition, roughly equal numbers of clients were obtained in three functional groups, i.e., high, medium and low on their ADL index. The hospital sample, 40% or the total client population, required that clients: be hospital inpatients awaiting discharge to an SNF; be residents of the catchment area prior to SNF; and have no prior SNF admission. Approximately 10% of the caseload is made up of recent SNF admissions.

Overall, the project is attempting to postpone or eliminate nursing home admissions by targeting individuals too independent for nursing homes, but too dependent to function in their homes without help. Clients are selected from a variety of settings, but have a need for community-based services.

Case managers first prescribe services which incurred no additional cost to the project, such as existing informal support networks, existing county social services or traditional Medicaid. Only after these sources are exhausted are the waived services ordered. The waived services, never before available with Medicaid funds, include: social day care, varied housing services (education, repair, moving, emergency shelter), in-home support services, legal assistance, respite care, transportation, meals, protective services, communication assistance and preventive health.

The MSSP project attempts to prospectively control service costs as part of its case management process. A cap on community service cost was established at \$505 per month, which is equivalent to 70% of skilled nursing facility costs. Included in this calculation are community services provided via the waivers, the state General Fund allocated to the project, Title XX, and Title III. The limit can be increased with supervisory approval, but no client has been for higher cost services for more than three months within any 12-month period.

Case Management

The elements and processes of the project's case management system are uniform across sites. However, there are unique site differences in terms of staff training or background in various positions and regarding operational difficulties experienced by each site in implementing their systems. Overall, case management staff are fairly professionalized, and the project implemented a casework type of case management where the client interacts primarily with one worker throughout his/her project tenure.

Further Developments

Originally, client services were to terminate in April 1983. However, a request for Section 2176 Medicaid waivers submitted by the State Health and Welfare Agency to continue the MSSP project was granted in June 1983. Thus, the social experiment phase came to an end in June 1983 and the program phase began in July. Two major differences took effect in the program phase: 1) there is no longer a comparison group;

and 2) clients must be certified or certifiable for nursing home care. The program services include: case management, adult social day care, housing assistance, respite care, non-medical transportation, meal services, protective services and special communication assistance. Since clients are required to meet the new waiver eligibility standards, only limited numbers of demonstration project MSSP clients were accepted into the new program.

Texas ICF II Waiver Project

Background

The Texas project is a state-wide program serving a wide range of urban, suburban and rural areas. At the time the demonstration began, Texas was above the national average for both the number of acute hospital beds and nursing home beds and had a nursing home occupancy rate of only 80%. Almost half of the state's Medicaid budget went for nursing home care, the majority of this sum for ICF care. The state was relatively undersupplied, however, in terms of alternative long-term care services. The major problem addressed by the Texas project was the high utilization and cost of ICF II care. The State Legislature's Joint Committee on Long-Term Care (1979) linked the problem to inappropriate nursing home placements and limited availability of alternative services that would have allowed frail elders to remain in the community.

Intervention Approach

Sponsored by the Texas Department of Human Resources (DHR) the ICF II Waiver Project was granted Medicaid waivers in January 1980. The project's goal is to phase out the lowest level of ICF care (ICF II) and reduce the total number of nursing home residents through diversion to home care. To facilitate diversion to home care, new community-based services are being developed. The DHR case management system and assessment tool are also being improved.

The project is in its fourth year of operation with waivers scheduled to end December 31, 1985. The project's scale of intervention is classified as "population" because the project affects all Medicaid recipients in Texas who were receiving ICF II care at the time the project began. The project is fully integrated into the regular operations of DHR and is part of the general reorganization of the Department implemented in 1980. DHR staff provide very few direct services to clients; only case management, including assessment and protective services is provided by the project, while all other services are contracted for. The intervention strategy utilized by the project is to control client access to and utilization of institutional services.

Operations

Administration of the Texas project is the responsibility of three state level offices within DHR: The Office of Programs, Office of Information Systems and the Office of Field Management. There are no

specific project sites. The entire system of regional and local DHR offices participates where local staff carry ICF II caseloads.

Since a primary goal of the project is to eliminate the ICF II level of care, services target the existing ICF II patient population. All those Medicaid recipients over 18 years old and classified as ICF II prior to March 1980 are project clients. The design calls for the assessment and placement of all these clients either to regular ICF, SNF or community care. Thus, the project caseload declines over time as ICF IIs are transferred into other programs. The waivers cover care for ICF II clients while they are being reassessed and placed. Waivers also cover ICF II clients who require Medicaid services after placement in the community. Clients receive the majority of their services through Title XIX and Title XX and a number of 100% state funded community care demonstration projects. In attempting to increase the availability and accessibility of alternate care, a massive reorganization of DHR took place in 1980, administratively combining Titles XIX and XX. Institutional and community-based care available to demonstration project clients were placed under one office, the Office of Aged and Disabled, and include: ICF, SNF, day activity and health services, non-medical in-home support services, home and congregate meals, primary home care, adult foster care, and special services for handicapped adults.

Case Management

Two major objectives of the Texas ICF II Waiver Project are to develop a unified medical/social needs assessment instrument and to develop an integrated case management system. Initially Title XIX and Title XX had separate assessment instruments for nursing home and community care applicants. Currently in progress is a plan to develop a new assessment instrument and consolidated case management instrument using a computerized approach to service delivery known as WELNET (Welfare Network). The project is still in the planning and development stage.

Current Status

Texas is the only one of the 13 demonstration projects still operating under its original waiver authority, which is not scheduled to terminate until the end of 1985. The project's administrators are confident that the majority of ICF II projects clients will be diverted to other levels of care by that time. For those who may still await placement it is expected that the State of Texas will arrange continuation of their care without further federal participation.

Georgia Alternative Health Services

Background

The Alternative Health Services (AHS) Project served a 17 county area of north central Georgia that included large, urban Atlanta, the small city of Athens and a number of suburban and rural communities.

Almost all of the AHS counties were below the national average for a number of acute hospital beds in 1978. The number of nursing home beds was also below the national average in the catchment area in 1976. There was a relatively poor supply of alternative services in the AHS counties, particularly outside of Atlanta. Home care services and other community-based services were not widely accessible and in much of the catchment area, the services simply did not exist.

The single most critical problem facing the State of Georgia was the increasing public costs of long-term care. The project attributed this problem to medically inappropriate nursing home placements which in turn was the result of the lack of social supports and community services. The project focused on the problem of the lack of alternative services as a means of addressing the larger issue of increasing public costs.

Intervention Approach

Faced by an essentially service poor environment and proposed in an era (1976) when funds for service expansion were available, AHS planners' intervention strategy focused on developing non-institutional long-term care alternatives to nursing home care as a means of controlling rising Medicaid costs. The project planned to implement cost and containment through reducing nursing home placement and providing a single point of entry to a continuum of care. Client service "budgets" were developed to assure that AHS care costs were less than institutional costs.

The AHS project was one of the earliest to be established, acquiring Medicaid waivers in July 1976 through October 1981. The project served a small proportion of eligibles across a multi-county area. Only case management was offered as a direct service. The majority of client services were provided on a contract basis.

Operations

The project was administered by the Georgia Department of Medical Assistance with some functions carried out by county Departments of Family and Children Services (DFACS). The DFACS were the agencies responsible for Medicaid eligibility determination and for providing adult protective services. Initially, two site offices were established (in Atlanta and Athens), each serving multiple county catchment areas. The target group for the AHS project was initially defined as individuals age 50 and older, eligible for Medicaid and certifiable for SNF/ICF care, i.e. either those waiting for nursing home placement or nursing home residents who could be deinstitutionalized with community support. The target group was later redefined to include an "at risk of institutionalization" group who met Georgia's Medicaid pre-admission screening criteria for ICF/SNF care, but had not applied for entry into such a facility. Thus, the AHS project's intended clients came from a broad variety of circumstances (institutional or community residents), but with a need for community-based long-term care services.

The project offered, via contract providers, three major service arrays: Adult Day Rehabilitation (ADR), Home Delivered Services (HDS), and Alternative Living Services (ALS). Each major service was comprised of one or more individual component services. ADR services were analogous to adult day health care, provided at a site open on a five hour a day basis. HDS included both the home health services available under Medicare and preventive care/maintenance of daily living activity services. ALS were all residential care programs: adult foster care, board and care, and congregate living arrangements.

Case Management

The AHS project actually had two levels of case management, one oriented more towards system-level concerns and the other directed at client level issues. Case management was defined by AHS as "the monitoring of client care and the authorization of changes in categories of services."

The core function of the AHS project was the implementation of the upper level "case management" system through the AHS team, composed of an AHS nurse, social worker, and a case worker. The team selected clients for admission, recommended the AHS service package, selected a case coordinator (the service provider likely to have the most client contact), supervised the care plan prepared by the service providers involved, assured compliance with the care plan, authorized changes in service type or quantity, and established client service "budgets" to ensure that AHS services did not exceed the cost for nursing home placement. The case coordinator, a primary service provider, handled the day-to-day client-level aspect of case management. It was the case coordinator's responsibility to develop a detailed care plan, arrange for service provision among all AHS providers and organizations external to AHS, verify Medicaid eligibility monthly, and resolve clients' daily problems and needs.

The AHS system of case management can be considered specialized in that no one person was responsible for carrying out all or nearly all of the elements of the process. The project made extensive use of non-professional staff (55% of AHS staff were high school graduates or had Bachelor's degrees in subjects not directly related to the type of service the staff person performed).

Transition to a Statewide Program

The AHS demonstration project was terminated only in the sense that it was converted from a research-oriented project to a service-oriented state program. The central AHS organization was restructured; employees were absorbed into state government; new providers were solicited to ensure state-wide coverage; and AHS systems were integrated into existing state programs in 1980. The authority for Medicaid waivers was transferred to Section 2176 of the Omnibus Reconciliation Act of 1980, which permits states to offer a wider array of community-based services via HCFA waivers for renewable three year periods.

Some modifications were made to the AHS project. The assessment instrument was revised and reduced in length and screening is now performed by a case worker or nurse. Clients determined to be eligible for services under the statewide program are referred to the appropriate service provider(s), each of whom assesses the client and becomes responsible for the client if services are initiated. When services are being received through several providers, the case coordinator role is assigned. The fact that the AHS demonstration project's policies and procedures were developed to be compatible with the existing system was a major factor in making possible the transition to a statewide program.

Triage Inc., Connecticut

Background

The Triage project operated within the central Connecticut Regional Planning Area, a region fairly typical of the rest of the state in the proportion of elderly among the total population, and the ethnicity and socioeconomic status of those over 65 years of age. The project catchment area included seven towns and cities, three of which were urban centers, three of which were suburban, and one of which was a relatively rural community.

Long-term care service availability in the project's service area in 1974, prior to implementation of Triage, was at a moderate level. Several alternative services existed but were not adequate to meet the needs of the elderly due to physical barriers, reimbursement problems or lack of capacity. Non-medical transportation and day care were completely unavailable. In general, medical services were widely available to the general public, but access was a problem for the aged. Connecticut was below the national average for number of acute hospital beds per 1,000 residents in 1978, but considerably above the national average for number of nursing home beds per 1,000 aged in 1976.

Project planners and staff identified several major long-term problems. The lack of alternative service availability due to inadequate public funding was critical. Fragmentation of care delivery and a lack of coordination of care, as well as inappropriate nursing home placements were also major problems.

Intervention Approach

Faced with these problems, Triage planners created project goals and objectives that reflected a basic philosophy: the long-term care system should be responsive to the needs of the individual rather than forcing those in need to fit into intractable requirements of the system. Specific project objectives were to provide a single entry mechanism to coordinate care, to develop necessary alternative services and an integrated delivery system, to obtain public and private financial support for such a system, and to demonstrate the cost effectiveness of coordinated care. In short, the project's intervention strategy was aimed at developing an alternative long-term care service system.

Triage was among the "first generation" of demonstration projects and was implemented in an era where expanding service availability was a predominant theme in the field of long-term care.

Triage operated with Medicare waivers (although it did serve a small proportion of Medicaid-eligible clients using Medicare funding). The project served one large sample of the eligible population in its multi-county catchment area from a single site. Triage was strictly a broker of services and did not provide any direct services other than case management and advocacy.

Operations

Medicare waivers were granted by HCFA for Triage I from July 1975 through April 1979. (The project had begun initial operations in 1974 with start-up funding from the state and the federal Administration on Aging.) Additional waivers were granted by HCFA from April 1979 through December 1981 to continue the project as Triage II.

Triage, under the Medicare waivers, was a free standing, private, non-profit corporation. During Triage I, there existed an open admissions policy. Clients needed to meet only three eligibility requirements: residence in the catchment area, Medicare eligibility and age (either over 65 with traditional Medicare or over 60 with Medicare disability benefits). There were no health status or income restrictions in keeping with the project's philosophy of "first come, first served." A major change in eligibility requirements occurred with the advent of Triage II. Health status restrictions were applied so that only those clients at high risk of institutionalization were accepted and the caseload was limited to 1500 clients. High risk was defined as: a need for assessment, coordination, monitoring and health education; a need for medical and social services; an unstable situation characterized by medical/social problems, poor informal support, environmental or financial problems; and the potential for deinstitutionalization (for those already in institutions).

Both Triage I and II accepted clients from a broad range of circumstances (e.g. hospital, community, SNF or elsewhere). Project services did include acute hospital and nursing home stays under project waiver authority, but the project did not intend to serve permanent nursing home residents at intake or those who were about to become permanent nursing home residents. The project's goal was to assist clients in maintaining community residence via alternative services.

A major accomplishment of Triage was the development of a broad service system that met both the acute and long-term care needs of their clients. The great majority of services were not provided directly by Triage staff. The project acted as a broker of these services. The Triage function was to assess need and to coordinate and monitor services. Services may be grouped into eight categories: institutional (acute, SNF/ICF and Homes for the Aged); ambulatory; home health; ancillary medical; mental health; social support; transportation, and home delivered meals. Triage reimbursed its providers through a claims

monitoring system which required that provider bills be checked against clinical authorization. As the single source for billing, Triage simplified the claims and reimbursement procedures as compared to the traditional system. During Triage II, the reimbursement mechanism remained the same, but project funding sources differed. From 1975 through March 1979, the state covered project operating costs (administration and case management) through legislative approval. The major portion of state funding ceased in 1979 and during Triage II, HCFA assumed the cost of operations and the research component as well. Under this scheme, case management became a waived service. In addition, under Triage II, clients were asked to help pay for nine of the waived services. No clients were dropped from the project for refusal to pay.

Case Management

Case management, provided by a multidisciplinary team, was the core function of the Triage project. Based on the brokerage model, case management activities included assessment, reassessment, coordination of the care plan and monitoring of service provision. The team composition changed from Triage I to II. Initially, there were seven teams, one per county, made up of a nurse-clinician and caseworker. Ultimately, requirements for the caseworker position were upgraded (to Master's level) and the job title was changed to Social Service Coordinator. During Triage II, the number of teams was reduced from seven to three and the number of members per team grew to seven (two master coordinators, three nurse practitioners, one social service coordinator, and one case assistant).

Both Triage I and II had a very high level of professionalization (staff with Master's level training or higher) among the case management staff. The project also employed the less specialized casework approach in that nearly all case management staff could perform nearly all the tasks required.

Termination

Intake for Triage II was open from June 1979 to September 1980 and preparation for termination of clients began over seven months later. All Triage clients were assisted back into the traditional system of care. A termination interview was held with each client and a service plan for continued care was created. The last client left the program in September 1981 and the Triage organization was disbanded on December 31, 1981.

Triage staff felt that the project made a number of contributions to the field of long-term care. These accomplishments included demonstrating that: it is feasible to provide and develop comprehensive services to the aged through a single entry mechanism and a simplified reimbursement system; inappropriate service utilization can be prevented by such a program through its case management function; client fees can lead to an increased client awareness of cost versus need and an increased interest in service quality; direct services need not be

provided by the same health professionals responsible for assessment and care planning; and that social support and counseling is extremely important to clients even when no medical services are provided.

Wisconsin Community Care Organization

Background

The Wisconsin Community Care Organization (CCO) operated three sites selected to reflect the demographic character of the state as a whole: one urban site in Milwaukee, one in a rural county; and one mixed urban and rural county. All three counties were above the national average for both acute hospital beds and nursing home beds. However, the availability of alternative long-term care service varied considerably among the three counties. Milwaukee was relatively well supplied with service before the demonstration project began, although there were serious problems with financial accessibility. In the rural and mixed urban/rural counties, many alternative services were in short supply. Two major problems in Wisconsin's long-term care system were identified by project planners: the lack of a coordinated non-institutional long-term care system and the high cost of institutional care to the state's Medicaid program.

Intervention Approach

Wisconsin CCO was funded through Medicaid waivers authorized from 1975 through 1979. Although the organizational characteristic of the sites differed, the overall intervention strategy was to develop an alternative long-term care system and thereby reduce expenditures for inappropriate nursing home utilization by the Wisconsin Medicaid program. The project was designed to develop new non-institutional services and to coordinate existing resources in order to develop a community-based service system. At the client level, project objectives were to maximize the independence of participants and to improve the quality of their lives. At the policy level, the project aimed to test whether community-based care could be provided to clients at a lower cost than institutional care.

Operations

A central state office within the office of the Lieutenant Governor oversaw the operations of the three county-based sites: Barron, Milwaukee and La Crosse. Staffing patterns varied by site, reflecting sites' organizational differences. Because the Barron site was integrated within an existing agency, very few new project staff were hired -- a total of seven by 1978. In contrast, the Milwaukee site, which was a free-standing entity, had a staff of 21 at its height.

The project targeted its services to Medicaid-eligible (except La Crosse where private pay was also accepted), functionally disabled adults (over age 18) residing in any of the three service area counties. Clients were selected from individuals who were: (1) awaiting discharge

from an acute facility and would otherwise be placed in a nursing home; (2) residents of nursing homes, but for whom institutional care was judged unnecessary; or (3) residing in the community but were either in a crisis and at risk of institutionalization, or were in need of home services to avoid deterioration and remain in the community.

Types of service available to clients through the project, in addition to case management, included advocacy, adult day care, chore service, companions, counseling, home health, homemakers, home delivered meals, housing search and repair, nutrition counseling, transportation and medical equipment. (For a complete list of the waived services see Attachment 2 of this report.)

Case Management

Case management at CCO was defined as the consolidation of responsibility for planning, organizing, directing and controlling the provision of services to or with an individual or family. Beyond this basic philosophy, there was diversity between sites as to how case management was organized. Milwaukee's approach was highly centralized. All case management functions were carried out by an interdisciplinary group of social workers and nurses known as service coordinators. Most of these staff members were trained at the B.A. level and were at the mid-to lower-level range of professionalization. Service coordinators were assigned to particular clients and performed all needed tasks for the duration of the client's participation in the project. Thus, Milwaukee utilized the less specialized "case work" approach to case management. The La Crosse site, on the other hand, utilized a very decentralized form of case management. Case managers were located in three sites: two hospitals and the County Department of Social Services. Their services were purchased for CCO clients. Contracted case managers carried out assessment, case planning and service ordering, with the La Crosse project staff signing off only on service plans and orders. The La Crosse site utilized a more specialized type of case management since no one person was entirely responsible for all the required tasks. In Barron County, CCO case management was a formalized process that was imposed on an already existing informal set of procedures. The case managers were employed by other community agencies and carried CCO and non-CCO clients. They were generally not involved in initial care planning, which was done instead by an assessment team made up of community health and social service agency supervisors who met weekly to approve care plans developed by CCO - Barron staff.

Even in the most centralized and controlled site (Milwaukee), CCO did not coordinate all services received by clients. This was in large part due to the "maintenance of effort" policy enforced in Milwaukee and La Crosse counties. The policy stated that all CCO services were to be supplemental in nature and not replace or reduce previous existing efforts of other agencies. Designed to avoid massive case load "dumping" on CCO and to safeguard against Medicaid abuse, the policy had the unintended effect of significantly reducing CCO control over cases where the project paid for only one or two of several services. In the opinion of the project's university-based evaluators, requiring

maintenance of effort reinforced extant patterns of fragmentation and perhaps even increased fragmentation by introducing another funding source -- waived Title XIX funds. Each agency providing services to CCO clients continued to claim that it also provided case management services.

Further Developments

Efforts were made by remaining Milwaukee and state level staff to find permanent funding for CCO through the legislature. They were unsuccessful in securing state funding, but CCO-Milwaukee was granted funding from the United Way in 1982 for a three year period. In addition, a new project, the Community Options Program (COP) was funded through Assembly Bill 66 in 1981. This program was designed to promote alternatives to institutional long-term care and includes many of the same service as CCO, such as meals on wheels, transportation, and in-home health care.

The project also provides pre-admission screening and assessment of Medicaid clients applying for institutional long-term care. In 1982, eight counties participated in COP and in 1983 up to 20 more counties (including Milwaukee) were included in the program. It will become a state-wide program in 1984.

Oregon FIG/Waiver Continuum of Care Project For The Elderly

Background

The FIG/Waiver Project served a five county area in Southwest Oregon, a rural area where agriculture, forestry and fishing are the primary industries. The FIG/Waiver catchment area had the lowest number of acute hospital beds per 1,000 residents of any of the projects in the national evaluation. Conversely, it had the next to highest number of nursing home beds per 1,000 aged residents. The state administered several programs which provided alternative long-term care prior to project implementation. On a statewide basis, the Adult and Family Service (AFS) program, Oregon Project Independence, and the Area Agencies on Aging all offered an extensive list of services to the elderly, but each had different benefits, eligibility criteria, and administrative structures. Within the project catchment area, a basic array of alternative services was available, but accessibility to these services was limited due to inadequate public funding.

The project identified two major problems in the long-term care service system. First, there was an uncoordinated and fragmented state service delivery system. Second, the lack of public funding resulted in the overuse of nursing home care and the underdevelopment of alternative care. These problems led to the overarching problem of high Medicaid long-term care expenditures due to inappropriate nursing home placement.

Intervention Approach

The project's ultimate goal was to provide appropriate, alternative long-term care services to the aged without any increases in cost above those that would have occurred in the traditional system. The project sought to accomplish this goal by controlling inappropriate nursing facility utilization and developing more alternatives to institutionalization. The project was designed to test two methods of achieving these goals: the FIG (Flexible Intergovernment Grants) component and the Waiver component. The FIG component (implemented in two counties) used local coordination mechanisms combined with a standardized functional assessment instrument and an information management system. It was a system-level intervention that required the cooperation of various health and social agencies providing long-term care to implement program procedures within the existing system. The Waiver component (implemented in two counties) involved a shift of funding sources allowing project counties to use Medicaid funds budgeted for SNF care to pay for alternative services normally financed through Title XX. This method was expected to address inappropriate institutionalization by increasing the availability of community and home-based services.

Operations

The FIG/Waiver project was housed in the Office of the Director of the Department of Human Resources (DHR) in a special studies section. Project staff did not see clients or provide client services. Their function was to coordinate communication and procedures between participating agencies and offer technical assistance to those implementing the program.

Both the FIG and Waiver components had certain eligibility requirements in common. Clients were required to be residents of the catchment area, Medicaid eligible and age 65 or older. In the two FIG counties, this encompassed all elders receiving health and/or social services from the participating agencies. For the Waiver component, aged Medicaid clients were provided alternative services using waiver allotments if they were moving from a hospital, moving from ICF/SNF, or not already receiving services from another funding source.

The FIG component of the project provided no new or direct services to clients; it represented a reorganization of information systems to administer direct service programs. The Waiver component provided reimbursement for services traditionally available under the Title XX program. These services included homemakers, housekeepers (chore service), home-delivered meals, adult foster homes, residential care facilities (non-medical) and limited transportation. The waivers supplied no new funds, but instead allowed savings from lower nursing home utilization to be diverted to defray Title XX community and home service expenditures.

Case Management

Both components of the project had specific case management interventions. Staff were not hired to provide case management services solely to project clients. Instead, case management was carried out by staff within the extant, participating agencies. Under the Waiver component, AFS staff provided client-level casework-type case management to both project and other Medicaid clients. The major case management element of the FIG component was an information system known as the PIB/280. All aged clients in the two FIG counties who received services from the participating agencies (AFS branch offices, Area Agencies on Aging, homemaker services, home health agencies, senior programs and nursing homes) benefited from this system level coordination effort. It involved two elements: the Placement Information Base (PIB) was a standardized assessment tool and the DHR280 form was a service activity report with basic demographic, functional and financial data. These two instruments were the only changes FIG introduced into the existing case management systems of participating agencies. The information they produced was intended to aid in identifying service gaps, duplication, overutilization and underutilization.

Expansion to a Statewide Program

The demonstration project terminated one year early, with demonstration clients no longer served by October 1, 1981. Research and administrative functions ceased by December 1, 1981. The demonstration project was brought to a close because the PIB/280 client-tracking system was implemented statewide earlier than expected; a new Senior Services Division was created to consolidate the functions and programs of the state AFS and OEA into one unit; and in November 1981 the state was notified that Title XIX waivers under Section 2176 of the Omnibus Budget Reconciliation Act had been authorized, making the demonstration waivers unnecessary.

The original focus of the project was to test and compare the effectiveness of two different methods of coordinating Oregon's long-term care delivery system: the FIG component, an assessment and information management system; and the Waiver component, which allowed Title XIX funds, budgeted for nursing home care, to be used.

Contrary to what was expected, project staff concluded that the FIG intervention was most effective in addressing the system's problems. The waiver-only county never did underspend its budgeted nursing home funds. Thus, the county never used waiver funds for alternative services.

SUMMARY

The demonstration projects may be thought of as experimental interventions into local networks of health and social services

delivery. This chapter presented a framework for classifying projects' approaches to solving long-term care problems which proves extremely useful in the analysis of cost and effectiveness impacts presented later in this report. Critical elements in defining intervention approach are waiver type, intervention scale, and intervention strategy. Intervention strategies of the projects were grouped according to five basic goal types:

- direct control of institutional admission,
- consolidating service delivery,
- developing a community-based long-term care service system,
- coordinating and filling gaps in the existing system, and
- upgrading the home care package.

In addition to discussing project differences, attention also was directed towards the element all projects had in common -- the provision of case management. Case management is viewed here as a major method for implementing project intervention strategies or goals. Four types of variation in the design of the case management process were presented.

The following chapter describes the evaluation design and lays the groundwork for the in-depth analyses of participant outcomes and cost-effectiveness.

NOTES

¹These topics were the subject of several chapters of Berkeley Planning Associates' Preliminary Report on Work in Progress, October 1982, and are only summarized here.

²Explored in detail in Berkeley Planning Associates' Preliminary Report on Work in Progress, October 1982.

³From Berkeley Planning Associates' Draft Research Design, March 1981, page CM-1.

⁴It should be noted that this usage of the term "professionalization" does not refer to the conscientiousness, dignity, or dedication staff members brought to their work. Project documents and administrators frequently commented on their success in attracting high quality staff members. Professionalization here is used in a more limited sense, referring only to type of discipline and level of training.

⁵The project case studies written for South Carolina, San Diego, New York City, On Lok and Project OPEN detail the history and community setting of each project, including: the nature of long-term care resources and gaps leading to development of particular intervention strategies; implementation procedures and problems; project organization (host agency, staffing funding); project operations (services offered, client selection); and case management organization and process.

⁶Berkeley Planning Associates, Preliminary Report on Work in Progress, October 1982, pp. 19-45.

⁷The professional level of the case coordinators was not available, and thus not included in the calculation of this figure.

III. CHARACTERIZING THE EVALUATION: A CONCEPTUAL FRAMEWORK

INTRODUCTION

This section presents a conceptual overview of the national evaluation and briefly discusses some of the methodological issues that arose. Major threats to the validity of the individual project analyses and to the cross-site comparative effort are described. Illustrated are important characteristics of the chosen solutions to these problems. Additional methodological issues are described in the individual project analyses in Appendix A and in Appendix C.

CONCEPTUAL OVERVIEW

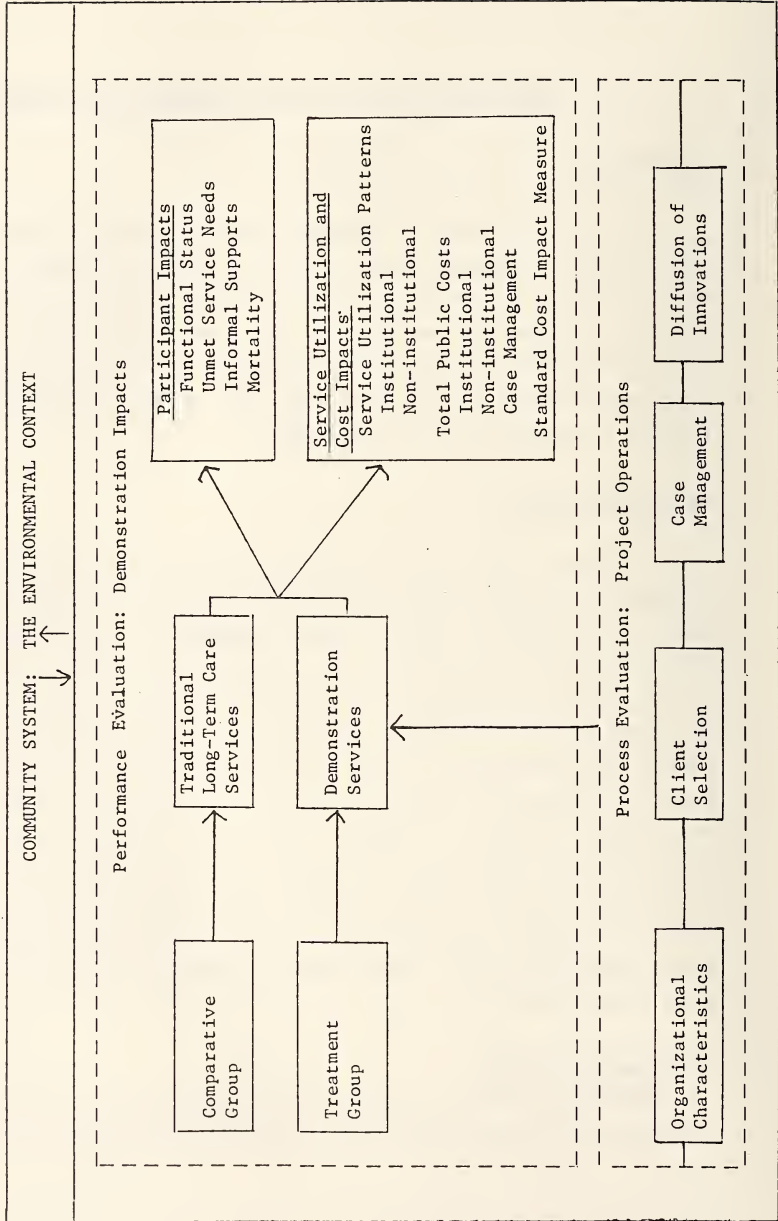
The overall goal of this ambitious meta-evaluation of the HCFA-sponsored coordinated community-oriented long-term care projects was to develop an integrative policy-relevant assessment of the impacts of the Medicaid and Medicare reforms on overall patterns of public expenditures for long-term care patients. The evaluation study also sought to assess the extent to which anticipated impacts of the demonstration programs on health care expenditures could be achieved without sacrificing the quality of life and the quality of medical and social care provided for participants. Figure 3.1 presents a model which provides a framework for describing the evaluation design and linking the various study components. The model and the overall study design combine two major types of evaluation: performance evaluation which focuses on how well a demonstration works; and process evaluation which concentrates on why a demonstration works.

Performance Evaluation

Within the context of a performance evaluation, the impact of a long-term care demonstration can be seen in many different ways. An

Figure 3.1

A Conceptual Model for the Evaluation of
Community-Based Long-Term Care Programs



important and useful distinction can be made between participant impacts and system impacts.

For individual participants, the question is whether the most effective services are being received. Effectiveness is measured by participant outcomes for clients served in the demonstration programs (the treatment group) relative to a similar group (the comparative group) receiving services in the traditional long-term care system.

For the in-depth evaluation of participant outcomes, the performance evaluation includes an assessment of the programs' impact on participant functional status (activities of daily living, instrumental activities of daily living, mental status) and mortality relative to a comparative group. This component of the evaluation also explores the impacts of the demonstration projects upon informal supports and participants' unmet service needs (see Chapters 5 and 7, and Appendices A and E).

A long-term care demonstration project also impacts on the community system of which it is a part. System impacts include an analysis of the impact of the demonstration program on service utilization and costs. For the in-depth cost-effectiveness evaluation, patterns of traditional Medicaid and Medicare service utilization and reimbursement are analyzed and the effectiveness of the demonstrations in controlling use of these services is assessed. Case management costs and patterns of waived service use are also examined. In addition, estimates of Medicare and Medicaid costs are presented for each of the projects (see Chapter 6 and Appendices A and C).

In assessing impact, BPA first examined the sign (+ or -) of the difference between the treatment and comparative groups to determine which was the more effective system -- the community-based care of the demonstrations or the traditional care system. The magnitude of the differences found was also examined to see if they were substantively important. Finally, statistical significance, when feasible, was assessed to determine the consistency with which impacts occurred across clients; that is, could one expect these differences between the treatment and comparative group to arise for most clients throughout this evaluation? Strict (some would say academic) standards (e.g., 5%

levels) were used for claiming statistical significance, presuming that the burden should be put on the long-term care demonstration to prove its relative client outcome and cost-effectiveness over the traditional system. This is tantamount to presuming that there should be a 95% probability that a finding of a difference in outcome is not due to chance, before acknowledging that finding. A program designer or policymaker with more need or willingness to act in spite of uncertainty may, of course, tolerate higher significance levels as he/she peruses evaluation findings to determine what is substantially important.

As explained earlier, due to several factors -- the ambitious scope of the evaluation, constraints in evaluation resources, termination of several projects early in the BPA contract period, and HCFA's evolving interest in particular project models -- the scope of the performance evaluation (participant outcomes and cost-effectiveness) was narrowed to focus on five of the 13 demonstration projects: the Long-Term Care Project of North San Diego County, the New York City Home Care Project, South Carolina's Community Long-Term Care Project, On Lok's CCODA, and Mt. Zion Hospital's Project OPEN. While not included in the in-depth performance evaluation, the remaining projects were included in various components of the process evaluation.

Process Evaluation

Process evaluation is important for understanding why a demonstration works well. Process evaluation identifies characteristics of the organization, demonstration start-up, operational and termination problems, as well as barriers in the community. Findings from the process evaluation are crucial to interpreting the quantitative data on the various projects, and are of interest to those planning or conducting other long-term care programs. Most importantly, the process evaluation provides possible explanations as to why demonstration projects differ in their performance.

Analyzing key aspects of project operations identifies factors that impede or contribute to the cost-effectiveness of community-based long-term care. Four areas covering important variations among the projects were identified for the process evaluation:

- Organizational Characteristics: The different program models presented in HCFA's demonstration effort include a range of management and organizational approaches and have differing relationships to the existing systems of long-term care service delivery. Variations in project operations and management strategies are important and may systematically affect the overall impact of community-based long-term care. This component of the process evaluation assesses projects in terms of organizational characteristics and structures, procedures, and historical development, and synthesizes experiences of the projects in attempting to implement their programs (see Chapter 2 and Appendix B).
- Client Selection: A major question for the national evaluation is the nature of the population being served by the various projects and, specifically, whether public long-term care resources are being focused on appropriate clients. To address this question, the selection criteria and processes utilized in the demonstrations were analyzed, as well as the demographic and functional characteristics of the elderly population served (see Chapter 4 and Appendix A).
- Case Management: In large part, the case management process distinguishes HCFA's community-oriented long-term care demonstration projects from earlier efforts to maintain aging and disabled persons in their homes. All the projects studied shared an emphasis on case management as a strategy for coordinating resources and for monitoring and improving the quality and appropriateness of care. Thus, a special study was undertaken as part of BPA's overall national evaluation in order to answer the question "How much does the production of case management and system coordination programs cost?" This component of the study also documented and analyzed the case management processes in each demonstration, i.e.,

eligibility determination, comprehensive assessment, care planning, service arrangement and service monitoring (see Chapters 2 and 6, as well as Attachment 1 and Appendices A, and B).

- Diffusion of Demonstration Innovations: It is unusual for health and social service demonstration and research efforts to have significant impacts beyond the demonstration on the organization and delivery of services within their host communities. Unlike many national demonstration efforts, the HCFA demonstrations of coordinated community-oriented long-term care have been influential in almost all cases in the development of policy changes at the local and state level. Understanding how these impacts occurred may provide direction to other states and localities as they consider programs to improve the long-term care service delivery system (see Chapter 8 and Appendix D).

The qualitative data analyzed as part of the process evaluation supplement the quantitative analysis of the cross-cutting performance evaluation.

THE STUDY PARAMETERS

The HCFA demonstration projects were social experiments conducted in a real-world setting. While this provided richness and variety to the experiments, it also placed some constraints on the research efforts. When interpreting the evaluation results, the reader should keep in mind some of the limitations of the study, as well as its strengths.

The Projects' Research Designs

The HCFA demonstration projects employed a variety of experimental and quasi-experimental research designs. In most of the projects, a number of important considerations, i.e., administrative, political,

ethical, and practical implications, precluded the use of a classical experimental research design for the comparative study. In an experimental research design, the decision whether or not a specific individual is assigned to the treatment or control group is made by random choice; this protects against biases and helps ensure the internal validity of the study. However, it is not uncommon for social experiments conducted in natural environments to encounter problems which make the actual sampling procedures deviate from a true experimental design. Not surprisingly, this was frequently found to be the case with the HCFA demonstration projects in this evaluation.

To compensate for departures from a true experimental design, statistical procedures, such as analysis of covariance using multiple regression, were employed to control and correct for differences between the experimental and comparative groups. These methods are described briefly in this chapter and in detail in the methodological appendix (Appendix C) and the individual project evaluations (Appendix A). Because these statistical procedures were employed, a greater level of confidence can be placed in the study findings. On the other hand, the non-equivalency of the experimental and comparative groups in most of the projects does place some limitations on the certainty of the findings and on the extent to which the findings can be generalized to other individuals served in other long-term care settings.

The Use of Secondary Data

The study required both primary and secondary analysis of data collected by the evaluator and the projects themselves. It is important to understand how Berkeley Planning Associates' evaluation fit into the research activities of the individual projects. In most sites, the majority of the analyses were performed on secondary data which had already been collected by the individual projects.

For older projects which had completed and produced definitive research findings, BPA relied heavily on extant data tapes and reports for understanding and guidance in the analysis. For projects which were fully operational and had already implemented a research design, BPA integrated as much of the existing data and published documents as

possible into the context of the needs of the national evaluation. Finally, BPA worked closely with the newer projects to develop research designs and data collection strategies which would meet both projects' research needs and the requirements of the BPA evaluation. In all cases, the BPA evaluation built on the research which each project had completed, and primary data collection was kept to a minimum.

The Time Frame for the Study

In order to have a comparable database across projects for assessing participant and cost impacts, it was necessary to limit the study period to a 12-month time frame. Although a number of the projects had collected data for a longer period of time -- up to 18 or 24 months -- the sample sizes usually became too small, due to attrition, to undertake any type of meaningful analysis.

Emphasis on Public Sector Costs

The analysis in the cost-effectiveness evaluation addresses public sector costs incurred by the government under the Medicare (Part A and Part B home health) and Medicaid programs. It has been estimated that two sources of reimbursement account for approximately 95% of the total public expenditures for long-term care (Abt Associates, Inc., 1984). Other public service programs, such as SSI, public assistance, food stamps, housing subsidies, and energy assistance, account for only a small proportion of total government long-term care expenditures.

METHODOLOGICAL ISSUES: CROSS-SITE COMPARISON OF PARTICIPANT OUTCOMES AND COST-EFFECTIVENESS

The HCFA community-oriented long-term care demonstrations developed independently and in response to the unique perceived delivery system problems of their communities or states. Beliefs about the most effective types of intervention varied almost as frequently as ideas about the most appropriate target populations for which the new services would be made available. Accompanying the variations in intervention methods

and community contexts were differences in research designs, assessment procedures, and data acquisition methods.

Nevertheless, each of the projects selected for the in-depth evaluation was to be evaluated individually and compared in terms of their public costs, impacts on health and social service use, and participant outcomes such as mortality and changes in functioning. At all times, it was recognized that these measures of effectiveness would be misinterpreted without recognition that the observed differences in the magnitude and direction of impacts would, to a great extent, be determined by differences in what the projects were attempting to achieve, how they went about the intervention, the types of individuals they enrolled, and variations in research methodologies.

Thus, the cross-site evaluation of participant outcomes and cost-effectiveness needed to address issues of validity at two discrete levels: (1) traditional concerns about validity in the assessment of individual project performance, and (2) assessment and comparison of differential project performance in the context of varying intervention strategies, participant populations and communities. Within any given project, the traditional threats to validity that received the greatest attention were differences between treatment and comparative samples at intake and differential rates and reasons for attrition, as well as the customary concerns with the relevance, reliability, and validity of measures. Across projects, the central validity issues concerned distinguishing true variation in demonstration performance from the artifacts of research approaches. Thus, performance differences resulting from alternative demonstration methodologies needed to be separated from the impacts of differing research designs, variables measured, and the nature of the measurements.

There were three major components to the evaluation's approach to these validity concerns:

- defining a common data set for cross-site comparisons;
- assessing measurement reliability and/or validity and finding the best solution to biased selection and attrition for each project; and

- developing standard measures of program impact that could meaningfully be compared across projects, while taking into account qualitative data from case studies and threats to individual project validity. Each of these components of the evaluation's approach are described below.

Development of the Common Data Set

The first step in approaching the in-depth participant outcomes and cost-effectiveness evaluation was to focus on the nature of project measurements and their sources. While projects collected a great deal of data, the cross-site evaluation faced a number of critical issues in data availability, quality, and, most importantly, comparability across projects. These problems were addressed through inclusion in the analytic data set of measurement domains and variables that were available in a sufficient number of sites and with sufficient similarity of measurement method to support comparative analyses.

For example, the issue of comparability of client assessment measures was addressed in the following way. First, detailed analysis of each project's assessment instrument was performed and areas of overlap and inconsistency identified. Second, individual items within an assessment domain (e.g., "telephone use" as an item in the Activities of Daily Living Index) and, on occasion, entire domains (e.g., affective functioning) were determined to be inappropriate for the cross-cutting evaluation. Such judgments were made by a panel of specialists and based on the grounds that when little or no consensus across projects could be found concerning an item or domain, it seemed reasonable to conclude that the state of assessment theory and practice in long-term care did not currently permit clear identification of the given item or domain as relevant for analyzing client outcomes. Third, in some cases there did appear to be consensual validity for the relevance of a domain or an item within a domain, but one or two of the projects had not collected such information. When feasible, a limited amount of new data collection was undertaken by the projects.

To address the issue of the validity of the assessment measures, the approach was to develop procedures for recoding or rescaling items and domains. By largely centering on ordinal and nominal levels of scaling in describing the various functional domains, and using multivariate techniques designed for categorical and ordinal (as opposed to interval) variables, it was possible to reduce the force of reliability weaknesses upon data analysis.

Although these measurement approaches are somewhat less fine-grained than would be desirable in an evaluation based on an integrated assessment instrument, they represent a level of specificity appropriate to the state of psychometric and theoretical knowledge in long-term care, as well as the quality of data developed by the demonstration projects.

Figure 3.2 lists the key variables included in the cross-site evaluation of participant outcomes and cost-effectiveness. The derivation of the common data set used to compare projects is described in great detail in previous BPA evaluation reports.¹

In Figure 3.3, the three major types of data collected at each of the projects (descriptive data, assessment/reassessment data, and service utilization and reimbursement data) are listed and the data source is specified. For each of the projects, the data set, the data sources, and the limitations are discussed at length in the individual project evaluations included in Appendix A.

Measurement of Reliability and Validity

Research in long-term care continues to be hampered by a lack of fully adequate studies of the psychometric properties, or even the relevance, of the major measures presumed to be associated with long-term care use or the progress of chronic diseases. This research project did not have the resources to change this situation. Nonetheless, measures available from the demonstrations were examined in light of what is known about the functional and cognitive assessment domains that have received most attention, and studies of inter-rater and inter-item reliability were performed.

Figure 3.2
Major Variables in the In-Depth Evaluation of
Participant Outcomes and Cost-Effectiveness

Demographics:

Age
Sex
Race/Ethnicity
Marital Status
Living Arrangements

Functional Impairment:

Activities of Daily Living (ADL)
 Bathing
 Dressing
 Toileting
 Transferring
 Feeding

Instrumental Activities of Daily Living (IADL)
 Meals
 Shopping
 Transportation
 Medications
 Housekeeping

Mental Status

Mortality

Service Utilization and Reimbursement:

Acute Care Days
Acute Care Admissions
Acute Care Reimbursements

SNF Days
SNF Admissions
SNF Reimbursements

Home Health Service Units (Parts A and B)
Home Health Reimbursements

Waivered Services Utilization
Waivered Services Reimbursement

Case Management Costs

Total Reimbursements

Figure 3.3
Major Types of Data and Their Sources for the
Evaluation of Participant Outcomes and Cost-Effectiveness

Project	Descriptive Information	Assessment/ Reassessment Data	Service Utilization and Reimbursement		
			Medicare	Medicaid	Waivered Services Case Management
New York City HCP	a) Primary data-BPA	Project data with BPA recoding	HCFA-BBHRS ^a	State of NY ^b	Primary data-BPA
	b) Project reports				
San Diego LTCF	a) Primary data-BPA	Project data with BPA recoding	HCFA-BBHRS ^a	State of CA thru MSSP project	Primary data-BPA
	b) Project reports				
South Carolina CLTCP	a) Primary data-BPA	Project data with BPA recoding	HCFA-BBHRS ^a	State of SC thru project	Primary data-BPA
	b) Project reports				
On Lok CCODA	a) Primary data-BPA	Project data with BPA recoding	Project data with BPA recoding	NA ^c	Primary data with data-BPA
	b) Project reports				
Project OPEN	a) Primary data-BPA	Project data with BPA recoding	HCFA-BBHRS ^a	NA ^d	Primary data-BPA
	b) Project reports				

^aHealth Care Financing Administration - Beneficiary Bill History Retrieval System

^bMedicaid data may be included in the Final Report.

^cProject data for On Lok based on provider records and diaries does not permit disaggregation of Medicare, Medicaid, and other public programs.

^dLess than 1% of the study sample used Medicaid services.

In general, two major criteria were used in development of indices for the evaluation. First, in the construction of scales, an attempt was made to selectively use items and domains available from the projects that were most in conformance with the best studied measures of activities of daily living, instrumental activities of daily living and cognitive functioning. Measures of psychological functioning, when available in a project data set, were utilized only if they conformed with validated measures or were tested for reliability. Measures of preference and other indicators of client status relative to a career of long-term care use were, in general, accepted at face value. These criteria often resulted in a common cross-site database which had more narrowly-defined and more crudely-scaled measures in the major functional domains than might have been devised from project data, but about which greater interpretive confidence could be maintained. The second criterion used in the development of indices was that measures of inter-item reliability (and in one case, inter-rater reliability) constructed from all indices and measures in particular domains were not utilized for those projects where inter-item reliability was below acceptable levels (e.g., .75). It is worth noting, that in the one case where inter-rater reliability was studied (the Long-Term Care Project of North San Diego County), reliability was found to be .9 or better for most measures.

Measurement concerns also arose relative to service utilization and, cost data. Several projects used diaries to track service use, but in most cases, differences in collection methods between experimental groups or easily-observed failures in the data collection process necessitated abandoning of these measures. The only project for which self-reported data were used was On Lok, because other sources of data were generally biased, due to their coverage or time frames. In this case, the self-reported data is supplemented through use of Medicare reimbursement data, as in other projects.

The federal and state utilization and reimbursement data were not examined from the perspective of reliability or validity (a task that would far exceed the resources of the national evaluation), but careful client-specific analyses of utilization patterns, comparisons with known

trends within project areas, and, in some cases, direct efforts to check patterns of utilization recorded in these systems against facility records were undertaken.

Control for Biased Selection

Each of the demonstrations included in the cross-site evaluation utilized an experimental or quasi-experimental design and performed a pretest and a multiple post-test, but wide variations in sampling procedures were utilized. In the Long-Term Care Project of North San Diego County and Project OPEN, subjects were randomly assigned to treatment and control groups after eligibility and appropriateness were determined. In South Carolina's Community Long-Term Care Project, subjects were randomly assigned to treatment and control groups after an initial appropriateness determination, but many clients still required determination of Medicaid eligibility while others were found inappropriate, or died, before actual admission to the study. Thus, considerable attrition occurred between group assignment and actual enrollment in the study. Finally, the New York City HCP and On Lok's CCODA used non-equivalent comparison groups formed through a variety of methods. Associated with all of these approaches is the potential for selectivity bias as a threat to internal validity. Across projects, inadequate control for selectivity bias represents a major threat to the validity of comparative performance assessment. The national evaluation sought a method for controlling selectivity bias that: (1) would be applicable to all projects, (2) would maximize sample sizes, (3) would be relatively easy to interpret and explain, and (4) would permit straightforward estimates of the statistical power of given tests.

The basic approach used to control for selectivity bias in the cross-site evaluation was analysis of covariance using ordinary least squares multiple regression (or, where appropriate because of the character of the dependent variable, the logistic and proportional hazard regressions using maximum likelihood estimates rather than ordinary least squares). In all cases, the identification of covariates followed a two-step process. First, all treatment versus comparative (e.g., control or non-equivalent comparison) groups were compared using t-tests

for interval level data and chi-squares for categorical and ordinal level data on all demographic, functional status, and informal support variables to be considered in that project. Second, where differences in both functioning/social support and demographic variables were observed, an attempt was made, using the analysis of covariances by multiple regression analysis, to control for the functioning/social support differences through demographic covariates, since such an analysis would permit identification of program impacts for readily identified homogeneous subpopulations. It was found, however, consistent with the emerging literature on the behavioral model of health services use (Anderson and Newman, 1973; Anderson and Aday, 1978; Wan and Arling, 1983), that such demographic controls were usually inadequate to remove functional/social support bias. In those instances where such controls were adequate, however, they were used instead of the functioning/social support measures.

Having identified the covariates, two distinct multiple regression models were examined. Model 1 represented a straightforward analysis of covariance using multiple regression, while Model 2 was a fully saturated model, including interactions between experimental groups and the covariates. If Model 2 did not involve a significant increase in the proportion of variance explained over Model 1, then Model 1 was used for the analysis. If Model 2 did represent a significant improvement (at the $p \leq .05$ level), then the assumption of homogeneity of treatment effects across levels of the covariates could not be maintained. In these instances, the covariate included in the interaction term with the greatest contribution to the model was decomposed and the analysis was performed again for the subpopulations defined by levels of that covariate. This process was repeated until a model without significant interaction terms was discovered. However, if repeated efforts to find subpopulations with homogeneous treatment impacts proved unsuccessful, it was concluded that selectivity bias was too severe to interpret the experiment with regard to the particular dependent variable.

It is important to note that when the analysis focused on change over time in functional status and social supports, a variable representing the pretest value of the dependent variable was included as a

covariate. This approach was chosen over analysis of change scores or similar methods because of the well-known problem of drastically decreased reliability associated with change scores.

This overall analytical approach is consistent with the criteria established for picking a solution to the biased selection problem. Analysis of covariance could be applied to all projects, though the particular covariates would differ as a function of the baseline differences between the treatment and comparative groups in each project. This type of analysis also allowed use of data from all clients in a demonstration, and could be easily explained in terms of familiar multiple regression concepts. At the same time, use of the saturated model, which included analysis of interactions between experimental groups and the covariates, had the extra bonus of permitting identification of subgroups for whom the treatment had differential but consistent effects, while permitting the use of proven methods of statistical power analysis for subgroups and the overall regression. Most alternative approaches did not satisfy these criteria.

Control for Differential Attrition

A common problem in social and health care experiments has been differential rates and reasons for attrition from the study between experimental and comparative groups. This problem was apparent in almost all of the projects chosen for detailed analysis in the cross-cutting evaluation. Differential attrition in the area of functional/social support measures can potentially introduce two rather distinct types of bias. On one hand, program impacts on functioning could be biased because the most impaired members of the study cohorts may have left the project due to death, thus creating the impression of generally more positive prognoses for both treatment and comparative cohorts. This was, in fact, the case in all of the projects. The attrition rate due to mortality is discussed in each of the individual project reports in Appendix A. This type of bias does not seem readily controlled, and it appears preferable to keep it in mind in interpreting results rather than to introduce the complexity of a separate prediction of the likelihood of death as a covariate in the models. A second kind of bias,

however, would be introduced if individuals with different characteristics were leaving the two samples. Statistical interactions between the experimental condition and whether or not an individual maintained project participation until the time of a follow-up assessment were examined to identify this type of bias-introducing process. Factors associated with such bias could be controlled in the analyses of covariance in much the same way as differential characteristics at intake. It was found, however, that in almost no situations were such interactions statistically significant, and thus it was not necessary to control for this type of attrition bias.

Attrition bias could also arise in the context of the utilization and cost analyses because of systematic differences between the treatment and comparative groups with respect to length of time in the study. Such attrition may be due to death, due to lost eligibility for the project, due to client preference to stop receiving services once functioning is improved, or due to the fact that there are few benefits to participants in a treatment or control group. Estimates of length of stay in various settings, and medical and social care resource consumption, can thus be differentially censored if utilization only during the period of project enrollment were examined. Such censoring could be particularly problematic if individuals chose not to participate because of dramatic improvement or decline in their functioning level or service needs. Application of life table analyses or similar survival analysis approaches to censored observations would not reduce the potential bias associated with such differential rates and reasons for attrition. To handle this potential problem, the national evaluation took advantage of the Medicaid and Medicare utilization and reimbursement data collection systems to track an individual after he or she had refused to participate in further interviews or after permanent placement in an institution (in many projects placement in an institution was the reason for discharge from the demonstration). For the purposes of the cross-cutting analysis, individuals were tracked for 12 months, or until death or their eligibility was lost (if such lost eligibility was based on leaving the catchment area or change in financial status). Client-initiated disenrollment or disenrollments based on change in functional

status were ignored. Through this approach, most study participants were tracked until 12 months after enrollment or until death.

The analyses based on this approach to differential attrition could still be biased if there were some differences in lost eligibility rates across demonstration projects. For this reason, all primary analyses are based on average monthly utilization and reimbursements rather than total utilization and reimbursements during the study period. The denominator used in calculating the average monthly estimates of utilization and reimbursements was determined on an individual basis, as a reflection of the period of tracking (rather than project enrollment) for a given individual. At the same time, individuals with less than a month of tracking data were excluded from the analyses because this was considered insufficient data upon which to base an estimate of average monthly service utilization patterns.

It is important to note in this context that definition of time frames for clients within individual projects could not be based on exactly the same logarithms within all the projects. That is, since projects used varied definitions of discharge status, and adopted varied definitions of the appropriate time for project-initiated discharge, it was necessary to tailor-make a system for deciding at what point to stop utilization and reimbursement tracking for clients in each project. The particular rules used in each project are described in the Appendix A analyses of the individual demonstrations.

Development of Standard Measures of Program Effect

While the development of meta-analysis as a technique for quantitative syntheses of experimental results has been remarkable in recent years (Hunter, et al., 1982; Glass, et al., 1982), most applications have occurred in contexts where there have been multiple replications of a similarly-designed experiment with at least some measures exactly comparable across experiments. This approach was considered for the functional change and mortality analyses in the national evaluation; that is, comparing the strength and direction of regression weights associated with experimental group membership in the analyses of covariance. However, the broad variations in measurement and the need to

introduce varying numbers and types of covariates precluded the ready interpretation of program impacts, thus making meta-analysis infeasible. This approach was also considered for the informal caregiving analyses, but ultimately there were too few projects permitting these analyses to provide the basis for a meta-analytic approach.

In the context of the utilization and reimbursement analyses, however, development of standard measures of program impact appeared imperative for several reasons. First, because of differences in data sources as well as the relevance of various data sources in each project, reimbursement data were analyzed separately for Medicaid, Medicare, and waived service utilization. Estimates of case management costs were not at the client level and thus represented a fixed additional public outlay associated with treatment group participation. Thus, a single measure of program impact combining these various sources and including the utilization factors appropriate to individual projects, but which could be compared across projects, needed to be developed.

Another reason for developing a standard measure of program impact was that the projects were conducted in highly heterogeneous health care markets and during differing time frames; thus, the magnitude of individual project effects could be confounded with differences in medical care pricing structures. For example, two projects could result in similar savings of, say, two hospital days per month, but if hospital days were priced differentially, this might appear as greater impact on costs for one project than for the other. A method was therefore required for standardizing projects across variations in pricing of health care and social services within their host communities and across time frames.

A form of breakeven analysis was viewed as one solution to this problem; it provided a standard measure of program impact. The standard metric is stated as the incremental cost of demonstration programs over the traditional system expressed as the number of nursing home days (or acute hospital days) required to equalize costs across experimental groups. Using the reduction in nursing home days necessary to "break even" as the standard metric provides adjustments for regional differences and inflation, since nursing home costs are specific to localities

at specific time periods. Analysis using a standard measure of cost impact also provides a structure for evaluating apparent quantitative relationships in a manner which will provide a basis for HCFA to apply judgmental levels of confidence to the potential impact for policy change. The derivation and justification for the analysis of cost-effectiveness is presented Chapter 6 and at greater length in Appendix C.

SUMMARY

This national evaluation of community-oriented long-term care demonstration projects was faced with challenges which go beyond the traditional concerns about the validity of social experiments. It was necessary to be able to separate variations in project performance associated with different interventions and target populations from variations in research designs and data collection protocols. Some of the major techniques used in addressing this task were described. A common data set that attempted to maximize the strengths of the data available from each project, while defining elements that could be compared across projects, was constructed. Problems in differential validity were resolved through use of measures that had known psychometric properties, even when projects could have developed richer or more sensitively-scaled measures. Reliability, in the sense of inter-item reliability, was assessed in all cases, and indices that failed to show adequate reliability were excluded from the analyses. A study of inter-rater reliability provided such encouraging results that this factor was generally not viewed as problematic. Bias associated with treatment versus comparative group differences at intake were controlled through the analysis of covariance by multiple regression, one of the only available statistical procedures that could be applied consistently across projects. Differential rates and reasons for attrition were examined in some detail and methods for their control were devised in the context of the functioning and informal support analyses; in general, these methods were not needed after careful consideration of the data. Biased attrition was controlled in the analyses of utilization

and reimbursement by tracking clients even after program disenrollment, if that disenrollment was not associated with death or lost geographic or financial eligibility. Most of the analyses were based on average monthly utilization in order to control for whatever differences in exposure periods still remained. Finally, standard measures of program impact were developed, whenever possible, for both the functional/social support and utilization/reimbursement data.

It is important to recognize that none of these approaches are adequate in themselves to allow fully cross-cutting observations or conclusions. The possibility that differences in research design or data collection methods confounded apparent differences in program performance must be admitted. Nonetheless, the careful application of the case study method and detailed work with individual projects, coupled with maximal use of project data even when this went beyond the goals of the cross-site analyses, all combined to aid the evaluators in attributing differences in performance to: project impact; contextual factors, intervention design or target group definition, where appropriate; and to the artifacts of research methods when no other plausible theoretical factors could be identified.

NOTE

¹See Berkeley Planning Associates' Revisions to the Research Design, Part 1, 1981; and Berkeley Planning Associates' Preliminary Report on Work in Progress" 1982.

IV. TARGETING GOALS AND CLIENT GROUP COMPOSITION

OVERVIEW

This chapter describes and compares the clients served in the HCFA-sponsored long-term care demonstration projects studied by BPA. Participant characteristics are analyzed on key variables that have been associated with service need and predictors of institutionalization of the frail aged. Knowledge of the client samples served by the various demonstration projects assists in interpreting differential program impacts related to client and cost outcomes.

The first section of the chapter describes the data set used to assess the characteristics of the client groups. Then, client characteristics are compared across projects. The third section describes the targeting goals of each project and compares these targeting goals with the characteristics of the clients who were actually served.

Only treatment clients are discussed in this chapter. Chapter 5 analyzes participant outcomes and thus addresses treatment versus comparative group changes over time and demonstration impacts. Similarly, Chapter 6 analyzes service utilization and cost of the treatment groups compared to the comparative groups assembled under the demonstration.

INTRODUCTION

Prior studies of community-based long-term care projects strongly suggest that patterns of service use and overall costs are directly related to the characteristics of the aged and disabled individuals participating in the programs. Thus, from a policy perspective, a major decision must be made about who should be considered eligible for participation in these new programs. That is, should all older persons be eligible? If not, to which subpopulations of the aged should

participation be restricted? This chapter provides basic descriptive information that, along with other national evaluation findings, will permit an informed response to these questions.

Prior Research

There is a growing consensus among both service providers and planners that long-term care cost savings can only be realized if services are targeted to older individuals truly at risk of institutionalization. A number of research projects evaluating the cost-effectiveness of expanded in-home and community-based services have found that the majority of the aged who used these noninstitutional services were not at risk of entering a nursing home (Georgia Department of Health Services, n.d.; Price and Ripps, 1980; Seidl, et al., 1980; Solen, et al., 1979; Stassen and Holahan, 1981; and Weissart, et al., 1980). As a result, nursing home utilization did not decline and there was little or no substitution of community-based services for nursing home care. In short, both the utilization and cost of long-term care services increased rather than declined.

Unfortunately, the state of the art with respect to assessment instruments and data in the long-term care field is such that it is extremely difficult to accurately predict which aged individuals are at high risk of institutionalization. Traditionally, disability was thought to be the major predictor of institutional placement, and assessment instruments focused primarily on medical diagnoses and functional status. More recently, researchers have begun to assess the relationship between institutionalization and the role of the informal support system. Nursing home placement has been found to be associated with a variety of factors such as living alone, widowhood, and the lack of informal support from family and friends (Keller, et al., 1981; National Center for Health Statistics, 1979; Weissert and Scanlon, 1982).

Level of disability and level of informal support are two important dimensions for the government to consider when defining the target population for publicly-funded community care services. Critical questions include: (1) Should community-based long-term care programs be

limited to the severely impaired or should these programs be extended to less severely impaired older persons? (2) Should community-based long-term care programs be limited to those without informal support, or should government programs which provide formal services be permitted to replace some of the services that traditionally have been provided by informal caregivers? There are reasonable arguments supporting either the expansion or the restriction of services to each of these subgroups of the older population (see, for example, Berg, et al., 1970; Caplow, et al., 1974; Dunlop, 1979; General Accounting Office, 1979; Greenberg, et al., 1980; Kulys and Tobin, 1979; Newman, et al., 1976; and Robinson and Thurnher, 1979).

CHARACTERIZING THE CLIENT GROUP -- THE DATA SET

The wide variety of health assessment instruments used by the demonstration projects produced a wealth of data on the biographical characteristics, living environment, social environment, health status, and level of physical and mental functioning of the clients served by the programs. For the national evaluation, a multi-dimensional assessment data set was developed by BPA to describe and compare client groups across projects on key variables. When developing the data set, a number of important methodological issues related to the comparability of data across projects had to be addressed. There was not a great deal of consistency among projects with respect to: (1) the variables included in the health assessment data set, (2) the operational definitions of the variables, and (3) the data collection procedures. These problems were addressed by identifying a key set of assessment variables which were available in a sufficient number of sites and with sufficient compatibility to support cross-site comparisons. (A discussion of the methodological issues and approaches for the national evaluation is found in Appendix C.)

The data set was developed by first conducting a review of the literature for measures which have been widely used and tested in research conducted on an older population (e.g., Katz's Activities of Daily Living Scale, Lawton and Brody's Instrumental Activities of Daily

Living Index, and Kahn's Mental Status Questionnaire). Second, an item analysis was conducted to determine the type and range of assessment variables which were used at each of the demonstration projects. The final data set included those items on which there was a general consensus in the literature about the reliability and validity of a measure, as well as comparability of data across the majority of demonstration projects. In many projects, a substantial amount of recoding and rescaling was necessary in order to obtain comparable measures across sites. In addition, data collection by several projects was altered or expanded at the suggestion of the national evaluator. A detailed discussion of the procedures taken to develop the common data set for the national evaluation is presented in "Issues in Developing a Cross-cutting Data Set for Evaluating Community-Based Long-Term Care Delivery Systems" (Capitman and Spivack, 1983).

Figure 4.1 lists the major health assessment variables included in BPA's cross-site comparisons.

Demographics

A number of research studies have demonstrated that demographic factors are often strongly related to functional status, the use of community services, and the use of institutional services. Nagi (1976) found that age, race, and sex accounted for almost one-third of the variance in independent living capability. Weissert, et al. (1980) suggest that living arrangement, age, race, and sex are among the more significant predictors of home care services use. Brody, et al., (1979) found that age and living arrangement accounted for significant variation in the impairment level of community residents, and these variables have been related to the likelihood of institutional placement in several studies. For the national evaluation, descriptive information was obtained on select demographic characteristics of each study group's clients including age, race, sex, marital status, and living arrangement.

Figure 4.1

Major Variables in the BPA Assessment Data SetDemographics

Age
Sex
Race/Ethnicity
Marital Status
Living Arrangements

Service Need IndicatorsFunctional Impairment

Activities of Daily Living (ADL)

Bathing
Dressing
Toileting
Transferring
Feeding

Instrumental Activities of Daily Living(IADL)

Meals
Shopping
Transportation
Medications
Housekeeping

Ambulation

Incontinence

Mental Status

Unmet Functional Needs

Unmet ADL Needs

Bathing
Dressing
Toileting
Transferring
Feeding

Unmet IADL Needs

Meals
Shopping
Transportation
Medications
Housekeeping

Service Need Indicators

In this evaluation, service need indicators were used to assess two distinct domains of functional status: functional impairment and unmet functional needs.

Measures of functional impairment or level of disability have traditionally been used by practitioners and researchers in the field of gerontology to identify clients in need of long-term care services. While measures of functional impairment do reflect raw disability or service needs, these measures do not take into account services provided by the informal support system. In contrast, measures of unmet functional needs -- which have been developed by BPA -- represent a more refined and accurate assessment of a client's service needs. Unmet functional needs assess a client's formal service needs after taking into account both the level of functional impairment and services provided by the informal support system.

Functional Impairment

Functional impairment or level of disability represents measures that reflect impairment commonly found among the older population which can be predictors of the need for institutional placement. Five principle categories of functional impairment were identified: Activities of Daily Living, Instrumental Activities of Daily Living, ambulation, incontinence, and mental status.

Activities of Daily Living. The Activities of Daily Living (ADL) Scale was initially developed by Katz, et al., (1963) to assess the ability to perform personal care activities necessary for self-maintenance. The original scale is a Guttman-scaled six-item (bathing, dressing, toileting, transferring, continence, and feeding) clinically-derived instrument. The Katz indexing incorporates an empirical sequencing of the debilitation process and has been found to have consistently high validity and generalizability to a variety of types of chronic health conditions. BPA's item analysis of the ADL measures used by the various demonstration projects revealed that only five of the six items in the original Katz scale were similarly defined and measured by the

majority of the projects. Thus, for the cross-site comparisons, the ADL measure was composed of five personal care items: bathing, dressing, toileting, transferring, and feeding.

Instrumental Activities of Daily Living. The Instrumental Activities of Daily Living (IADL) Scale was developed by Lawton and Brody (1969, 1972) to assess the ability to perform a vital group of self-maintaining activities essential to community tenure. The original instrumental functioning scale includes eight items (shopping, meal preparation, telephone use, medication administration, laundry, housekeeping, transportation, and financial management). While these activities vary widely, they are important to independent living and all projects included several measures of instrumental functioning. However, a number of the projects did not assess the ability to use the telephone, the ability to do laundry, or the ability to take care of personal finances. Consequently, for the purposes of the cross-site comparisons, the IADL measure was composed of five self-maintenance activities: meal preparation, shopping, transportation, self-medication, and housekeeping.

Ambulation. Along with physical and instrumental activities of daily living, ambulation or mobility is one of the most important areas of functioning necessary for maintaining independent living. For the majority of the projects, data were available on two items measuring ambulation: assistance with walking and bed- or wheelchair-bound.

Incontinence. The inability to control bladder and bowel functioning is often a major determining factor in institutional placement. For the majority of the projects, data were available on three items measuring incontinence: incontinence of bladder, incontinence of bowel, and incontinence of both bladder and bowel.

Mental Status. Aging is often associated with progressive mental deterioration (Butler and Lewis, 1977) and the incidence and prevalence of chronic mental and affective disorders among the aged is high (Simon,

1968, 1969). BPA's item analysis of the assessment instruments used by the demonstration projects revealed that the general area of psychological functioning was viewed as an important functional measure, but there was little consensus on the component elements of this functional domain. Variables which were included ranged from cognitive functioning to pathological behavior and service satisfaction. The only measure of psychological functioning which was used by the majority of the projects was cognitive functioning. However, two somewhat different, yet compatible, versions of a Mental Status Questionnaire were used: Kahn's Mental Status Questionnaire (1960) and Pfeiffer's Short Portable Mental Status Questionnaire (1975). For the cross-site evaluation, mental status was measured using an adjusted mean score based on the version of the mental status questionnaire used by each project. In two projects, an MSQ measure was not available and a proxy measure was developed from assessor ratings of short- and long-term memory, and orientation to time, place and person. (Throughout the report, "MSQ" is used to refer to the mental status variable in each project, regardless of the specific composition of the measures.)

Unmet Functional Needs

The role of the informal support system (i.e., help from family and friends) has not traditionally been included as part of the service needs assessment process. During the past decade, a number of studies have found that, contrary to prevailing stereotypes, the informal support system provides more assistance to the elderly than do formal organizations (Branch and Jette, 1983; E. Brody, 1978, 1981; S. Brody, et al., 1978; Cantor, 1975, 1980; Comptroller General of the United States, 1977; and Shanas, 1979). Since the traditional indicators of service need (i.e., functional impairment or level of disability) only reflect raw disability and do not consider assistance provided by informal caregivers, the traditional measures are not a very precise indicator of unmet service needs.

BPA's concept of unmet needs represents a modification of the approach to defining social disability which was proposed by Branch and Jette (1981) in the Framingham Disability Study. In that study, unmet

needs were defined as residual need once the impacts of both the formal and informal support system were taken into account. The approach used by BPA was to define unmet or residual needs in terms of a client's formal service needs after considering the degree of assistance provided by family or friends only. By assessing the extent to which the informal system is available to assist clients who are impaired in activities of daily living and instrumental activities of daily living, it is possible to provide a clearer picture of the need for services from the formal service system. To estimate the unmet formal service needs of clients in the demonstration projects, BPA developed two measures of unmet functional needs: unmet ADL needs and unmet IADL needs:

- Unmet ADL Needs, composed of five measures of ADL activities (bathing, dressing, toileting, transferring, and feeding) that the client was unable to perform and for which no informal caregiver provided help at the time of assessment.
- Unmet IADL Needs, composed of five areas of IADL activities (meals, shopping, transportation, medications, and housekeeping) that the client was unable to perform and for which no informal caregiver provided help at the time of assessment.

This determination of unmet functional needs reflects situations where the client's impairment in an ADL or IADL activity was not compensated for by assistance from an informal caregiver. There was not enough detailed data available from the projects to discriminate between partial situations, i.e., activities where a caregiver was present but provided insufficient assistance. The measures thus tend to underestimate the residual service need after accounting for informal caregiver participation. However, these measures of unmet ADL needs and unmet IADL needs do provide a better estimate of unmet formal service needs than do the traditional measures of functional impairment alone, which fail to consider services provided by informal caregivers.

The Analysis

The comparative analysis presented in this chapter is based on a two-stage process. First, for all projects, for each item or variable included in the analysis, the best available approach to analysis of an individual project was used. The goal was to find the best estimate of a given measure for individual projects. Then, in the second stage, comparisons were made among projects, when such comparisons could be reasonably performed.

In light of the limitations on the standardization of the variables across sites, a descriptive approach is used to compare the client group composition of the demonstration projects. Large differences between the projects, as well as trends and patterns are discussed, but statistical tests of significance are not performed.

CROSS-SITE COMPARISON OF CLIENT GROUP COMPOSITION

The findings in this section focus on similarities and differences among the clients served by ten of the demonstration projects (i.e., the treatment group). Because major differences in baseline characteristics of clients on key variables could significantly affect service utilization and cost outcomes among projects, it is important to assess the extent to which clients in the various projects represent a homogeneous subset of the aged population.

Similarly, the equivalency of the treatment and control groups within each of the projects is an important research issue for the within-project analysis of program impacts. This issue is addressed in Chapter 5 which analyzes differences in outcomes for the treatment and comparative groups over time. An analysis of the baseline equivalency of the treatment and control groups for the five projects under detailed study is presented in Appendix A.

The Sample Sites

In the analysis which follows, ten of the 13 HCFA demonstration projects are compared. The three projects that are not included are the Oregon FIG/Waiver Project, Texas ICF II Project and Georgia AHS. The

Oregon and Texas demonstration projects were not included because client level data were not available in computerized data bases on comparable assessment variables such as demographic characteristics and functional status.¹ Georgia was excluded from the analysis because the project terminated prior to BPA's national evaluation and there was insufficient data available from the project's final evaluation report to undertake a meaningful comparison of the Georgia clients with clients in the other demonstration projects. For example, data were not available at the task level on Activities of Daily Living and Instrumental Activities of Daily Living which were the two primary measures of clients' level of physical functioning used in this analysis.

The ten demonstration projects included in the cross-site analysis of client baseline characteristics, and the size of the client (treatment only) group samples are:

<u>Project</u>	<u>Client (Treatment) Sample Size</u>
ACCESS I	5,915
Florida Pentastar	686
MSSP	2,141
New York City Home Care Project	504
On Lok CCODA	300
Project OPEN	220
San Diego LTCP	555
South Carolina CLTCP	539
Triage II	495
Wisconsin CCO -- Milwaukee	129

Tables 4.1 through 4.4 present baseline data on the composition of the client groups served by each of the demonstration projects with respect to demographics and service need indicators.

Demographics

Table 4.1 presents data on the baseline demographic characteristics of clients in each of the demonstration projects. Although there was some variability among projects with respect to admission criteria relating to age, all of the projects' services were primarily targeted for an aged population and most of the projects required that clients be at least 60 years of age or older. The majority of the demonstration clients represented what is referred to as the "old-old" population. In each project, more than one-half of the clients were 75 years of age or older. At the two extremes, the ACCESS I project had the largest proportion of clients who were 85 years of age or older (37%), while the South Carolina CLTCP project had the largest proportion of clients under 65 years of age (19%).

With the exception of the On Lok project, the majority of the clients were female, which is representative of the older population in general. The slightly higher proportion of male clients at On Lok reflects the large number of single male Chinese immigrants living within the On Lok geographic catchment area.

There was considerably more variation among projects with respect to race/ethnicity. The ACCESS I and San Diego LTCP projects served a predominantly White population. In the remaining projects, the racial composition represented a mixture of ethnic groups which were largely a reflection of regional or catchment area demography. The principal non-White racial/ethnic groups represented among the projects were: for Project OPEN, Japanese and Black; for MSSP, Black and Spanish; for On Lok, Chinese and Filipino; and for Wisconsin CCO, South Carolina CLTCP, and Florida Pentastar, Black. On Lok was, however, the only project in which the majority of the clients were members of an ethnic/minority group.

Marital status and living arrangement (i.e., alone or with others) are often cited as important predictors of institutional placement because they can represent proxy measures of level of informal support -- the absence of which can hasten institutional placement. In all of the projects more than half of the clients were either widowed, divorced or single, which indicates that these clients did not have the principal

Table 4.1
Characteristics of the Client Groups: Demographics^a

	New York City (n = 504)		South Carolina (n = 539)		ACCESS ^b (n = 5,912)		On Lok (n = 300)		Wisconsin (n = 129)		San Diego (n = 555)		Florida (n = 686)		MSSP (n = 2,141)		Triage II (n = 495)		Project OPEN (n = 220)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<u>Age</u>																				
Under 65	504	0%	537	19%	5,908	--	300	6%	129	1%	555	0%	686	7%	2,141	6%	495	1%	220	14%
65 - 69		17		11		8%		10		22	1%		9		13	0%		10		0
70 - 74		15		16		13		15		21	2%		21		19	0%		17		23
75 - 79		21		18		18		21		26	2%		23		20	0%		20		18
80 - 84		23		17		25		23		17	2%		17		18	0%		24		19
85+		24		21		37		24		14	2%		22		24	0%		29		26
<u>Sex</u>																				
Female	504	69	539	70	5,912	70	300	49	129	80	555	69	675	83	2,026	71	495	72	220	70
Male		31		30		30		51		20	31		17			29		29		30
<u>Race</u>																				
White	504	78	539	78	5,296	92	300	22	129	71	555	98	674	56	1,976	68			219	69
Other		22		22		8		78		29	3		44		33	0%				31
<u>Marital Status</u>																				
Married	501	45	538	29	722 ^c	23 ^c	300	30	129	12	555	44	656	18	2,016	23	495	44	220	31
Widowed/Divorced/Single		54		61		77		70		88	56		82			77		56		69
<u>Living Arrangement</u>																				
Alone	499	35	494	25		--	297	46	123	85	555	52	633	53	2,046	51	495	39	220	55
With Others		64		75		--		54		15	48		47			49		61		45

^aPercentages do not always total to 100% due to rounding.

^bACCESS I age 65 and over only

^cData were available on only 122 of the client sample

source of informal care in the aged population -- the spouse. In five of the projects (Project OPEN, San Diego LTCP, Wisconsin CCO, MSSP and Florida Pentastar) more than one-half of the clients lived alone, suggesting that to the extent that clients in these projects were receiving informal care, it was not from a household member and thus potentially represented a more fragile support system.

Service Need Indicators

Service need indicators were used to assess two distinct aspects of functional status: (1) functional impairment or level of disability; and (2) unmet functional needs after accounting for assistance provided by informal caregivers.

Functional Impairment

Measures of functional impairment assess the presence or absence of physical and mental limitations. These measures reflect impairments related to medical diagnoses commonly found among the older population which may be indicators of the need for long-term care services. Five functional impairment measures were assessed: Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), ambulation, incontinence and mental status. As the data in Table 4.2 show, there was considerable variation in the level of functional impairment among project clients at the time of the baseline or initial assessment.

On the variables assessing clients' Activities of Daily Living (bathing, dressing, toileting, transferring, and feeding), in four projects more than three-fourths of the clients were impaired on one or more of the ADL measures -- South Carolina CLTCP (95%), New York City HCP (95%), On Lok (85%), and ACCESS I (82%). The remainder of the projects served clients with substantially less functional impairment in ADL. Project OPEN had the largest proportion of clients who were totally independent in ADL, with only one-half (50%) of the clients impaired in one or more of the ADL measures.

While the measures of ADL assess the ability of an individual to perform a range of self-care activities necessary for daily living, the Instrumental Activities of Daily Living (IADL) assess the performance of

Table 4.2

Characteristics of the Client Groups: Functional Impairment^a

Functional Impairment	New York City (n = 504)		South Carolina (n = 539)		ACCESS I (n = 5,915)		On Lok (n = 300)		Wisconsin (n = 129)		San Diego (n = 555)		Florida (n = 686)		MSSP (n = 2,141)		Triage II (n = 495)		Project OPEN (n = 220)	
	n	z	n	z	n	z	n	z	n	z	n	z	n	z	n	z	n	z	n	z
Activities of Daily Living (ADL)																				
Bathing	502	95 ^b	538	96 ^c	5,905	79 ^c	285	78 ^c	50 ^c	↑	52 ^c	↑	49 ^c	↑	2,009	47 ^c	48	220	48	
Dressing	503	76	538	84	5,910	66	284	44	16	33	25	33	25	31	219	15				
Toileting	502	53	369	83	5,910	52	283	34	119	26	22	35 ^d	13	1,010	23	17	220	6		
Transferring	503	53	537	64	5,910	46	179	60	10	7	13	↑	5	1,941	7	9	220	7		
Feeding	503	35	536	59	5,915	49	285	9	62	55	55	↑	58 ^c	↑	1,972	61	54 ^c	219	50	
Percent Impaired in at least one ADL	500	95	529	95 ^c	5,893	82	178	85												
Instrumental Activities of Daily Living (IADL)																				
Meals	502	96	531	86	↑	80	283	88	118	69	64	↑	51	↑	1,351	87	68	219	30	
Shopping	502	100	533	94	96	87	283	87	118	85	86	↑	89	↑	1,045	76	83	219	68	
Transportation	499	97	533	94	95	86	283	86	118	71	86	297	88	2,045	69	78	220	39		
Medications	502	54	517	76	5,915	85	271	89	115	21	35 ^d	↑	20	2,046	40	402	40	207	14	
Housekeeping	503	100	529	95	94	271	89	118	92	88	84	↑	84	1,633	78	81	220	64		
Percent Impaired in at least one IADL	499	100	515	97 ^c	99	271	93 ^c	93 ^c	114	97	97	↑	97 ^c	↑	2,045	80	94 ^c	206	81	
Amputation																				
Walks with Assistance	504	32	537	32	5,915	38	277	32	119	35	555	644	56	2,003	60	203				
Wheelchair or Bedbound	13	41	41	41	19	56	36	36	7	42	25	68	12	2	2	41				
Percent with some impairment in ambulation	46	72	72	72	56	36	36	36	42	42	25	68	68	62	62	44				
Incontinence																				
Bladder	503	21	533	21	5,915	13	300	18	—	—	555	270	17	2,009	—	220				
Bowel	4	4	5	5	4	4	13	13	—	—	—	—	3	—	—	—				
Bladder and Bowel	14	14	33	33	27	30	30	30	—	—	—	—	3	—	—	—				
Percent incontinency of either bowel or bladder	38	38	58	58	44	44	60	60	—	—	43	43	22	47	47	—				
Mental Status (MSQ - Number of wrong answers 0-10)																				
Average Score	451	2.6 ^e	441	3.5	5,341	2.4 ^e	277	3.2 ^e	93	1.5 ^e	555	2.3	1.4	1,936	1.7 ^d	487	1.7	220	.6	
Standard Deviation	33	3.5	50	4.0	35 ^c	35 ^c	54	54	—	—	—	3.1	.63	—	—	—	2.8	2.2		
Percent with some mental impairment																				

^aPercent do not always total to 100% due to rounding.^bACCESS I age 65 and older only.^cBased on a different scale than the evaluator's.^dThis is a midpoint average from a four-step scale.^eBased on a different measure than the evaluator's 10-point MSQ scale.^fThe ADL and IADL assessment instrument was not implemented until 36% of the baseline assessments had been completed.

some of the more complex activities associated with independent living; i.e., meals, shopping, transportation, medication, and housekeeping. As the data in Table 4.2 show, in each of the projects, a higher level of functional impairment was found in IADL than in ADL. In eight of the ten projects, at least 93% of the clients were impaired on one or more measures of IADL. The two exceptions were MSSP and Project OPEN; the proportion of clients impaired on one or more measures of IADL was 80% and 81% respectively. It is clear that all projects served clients with need for some instrumental support.

Among the projects with data available on ambulation, three projects had a relatively large proportion of impaired clients: South Carolina CLTCP (72%), Florida Pentastar (68%), and MSSP (62%). At the other extreme, only 25% of the clients in the San Diego LTCP project were impaired in ambulation. For most of the projects, impairment in ambulation represented the need for assistance when walking. In all but one of the projects, less than 20% of the clients were wheelchair- or bed-bound. The exception was the South Carolina CLTCP with a very high proportion (41%) of the clients either wheelchair- or bed-bound.

The data on incontinence were consistent with the patterns of functional impairment which were observed in ADL. Among those projects for whom data was available, four projects had the highest proportion of clients who were incontinent of both bowel and bladder -- South Carolina CLTCP (33%), On Lok (30%), ACCESS I (27%) and New York City HCP (14%).

In addition to levels of physical impairment, an assessment of the level of cognitive impairment was available for clients in each of the projects. As the data in Table 4.2 show, many of the projects served clients with intact mental status. In five of the projects -- Project OPEN, Triage II, Wisconsin CCO, MSSP, and Florida Pentastar -- the adjusted average number of errors on the Mental Status Questionnaire was less than two out of a possible ten points, indicating almost perfect functioning. In contrast, the South Carolina CLTCP, On Lok, New York City HCP, ACCESS I, and San Diego LTCP projects had a relatively large proportion of clients who had some mental impairment. It should be noted that South Carolina CLTCP, New York City HCP, ACCESS I, and On Lok also served clients who were more physically impaired than clients in

the other projects. San Diego LTCP, on the other hand, served a client group which was only moderately dependent in physical functioning, but was somewhat more impaired in cognitive functioning.

To facilitate the cross-site comparisons of client groups' functional impairment, Table 4.3 presents each project's position in rank order ranging from "most impaired" to "least impaired," based on the proportion of clients with impairment on three overall measures of functional status: ADL, IADL, and mental status. (The functional impairment measures assessing ambulation and incontinence were not included in this analysis due to large amounts of missing data.)

As can be seen in Table 4.3, four projects have the highest overall proportion of clients functionally impaired in Activities of Daily Living (ADL) and mental status -- New York City HCP, South Carolina CLTCP, ACCESS I and On Lok. Clients in these four projects also exhibited a relatively high level of impairment in IADL.

Compared to clients in the other demonstration projects, clients in Project OPEN had the least amount of functional impairment in ADL and mental status, and the level of impairment in IADL was also quite low. Clients in the remaining five projects fell within a middle range of functional impairment.

To obtain an overall estimate of the clients' level of functional impairment, rank order scores on the three different measures of functional impairment (ADL, IADL, and mental status) were totaled and an average composite functional impairment score was calculated. Figure 4.2 graphically displays the distribution of project clients' level of impairment based on the composite functional impairment score. As shown in Figure 4.2, clients in the South Carolina CLTCP and New York City HCP projects had the highest overall level of functional impairment. A relatively high level of functional impairment was also found among the ACCESS I and On Lok clients. Relative to the other projects, clients in these four projects can be classified as severely impaired.

Five of the projects -- Wisconsin CCO, San Diego LTCP, Florida Pentastar, MSSP, and Triage II -- served clients whose level of functional impairment fell within a middle range. Relative to the other

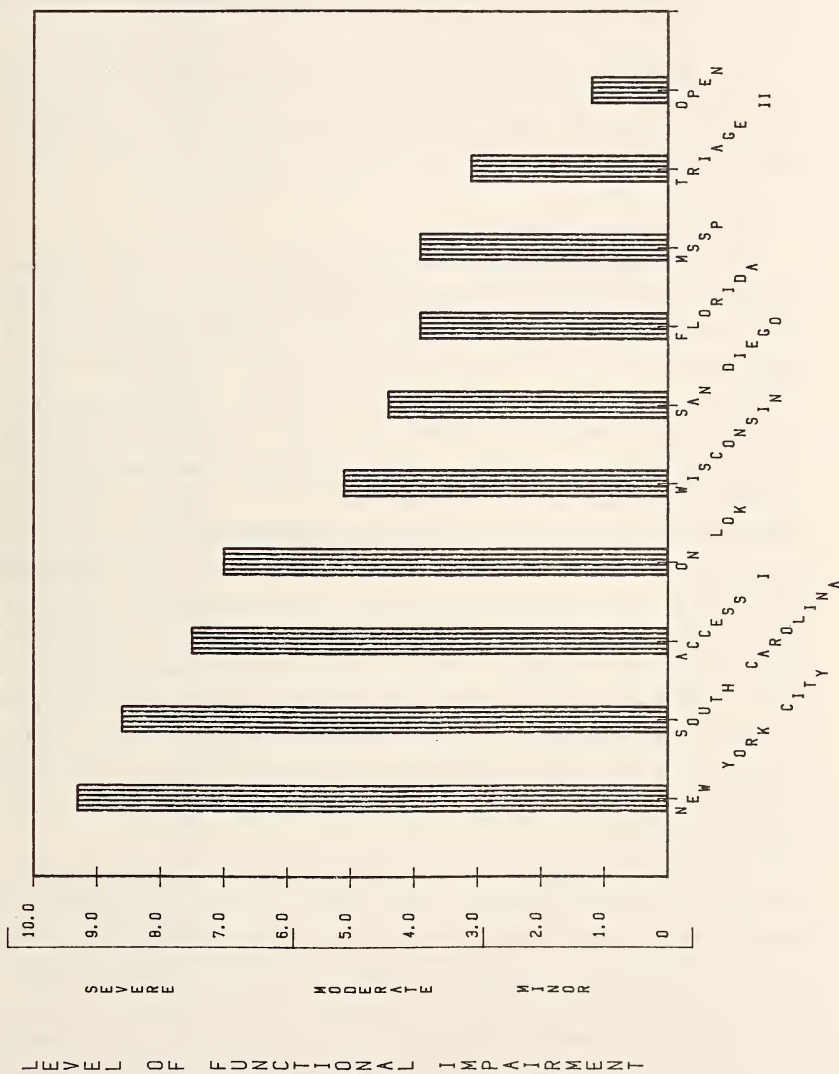
Table 4.3
Distribution and Rank Order of Projects Based on Proportion of Clients
Functionally Impaired in ADL, IADL, and Mental Status

	Functional Measure											Composite Functional Impairment Score	
	ADL ^a				IADL ^b				Mental Status ^c				
	Project	% Im- paired	Rank ^d Order	Project	% Im- paired	Rank Order	Project	Mean Scores	Rank Order	Project	Score		
												Project	Score
Most Impaired	So. Carol.	95%	9.5	NYC	100%	10.0	So. Carol.	3.5	10.0	NYC	9.3		
Level of Impairment ↑ ↓	NYC	95	9.5	ACCESS I	99	9.0	On Lok	3.2	9.0	So. Carol.	8.6		
	On Lok	85	9.0	So. Carol.	97	5.5	NYC	2.6	8.0	ACCESS I	7.5		
	ACCESS I	82	7.0	Wisconsin	97	5.5	ACCESS I	2.4	7.0	On Lok	7.0		
	Wisconsin	62	6.0	Florida	97	5.5	San Diego	2.3	6.0	Wisconsin	5.1		
	MSSP	61	5.0	San Diego	97	5.5	MSSP	1.7	4.5	San Diego	4.4		
	Florida	58	4.0	Triage II	94	4.0	Triage II	1.7	4.5	Florida	3.9		
	San Diego	55	3.0	On Lok	93	3.0	Wisconsin	1.5	3.0	MSSP	3.9		
	Triage II	54	2.0	Proj. OPEN	81	2.0	Florida	1.4	2.0	Triage II	3.1		
	Proj. OPEN	50	1.0	MSSP	80	1.0	Proj. OPEN	0.6	1.0	Proj. OPEN	1.2		

^aThe ADL score was weighted by a factor of 2 because it measures a higher level of physical disability than the IADL score. Then the rank order scores on ADL, IADL and Mental Status were totaled and an average score was calculated.

Figure 4.2

Distribution of Project Clients' Level of Impairment
Based on a Composite of Functional Impairment Score



projects, clients in these five projects can be classified as moderately impaired.

Only one project -- Project OPEN -- served clients whose level of functional impairment was quite low. Compared to the other projects, clients in Project OPEN can be classified as having only minor functional impairment.

Unmet Functional Needs

Table 4.4 presents data on the proportion of clients with residual dependencies in ADL and IADL after assistance provided by the informal network was taken into account. An individual was rated as having an unmet need if he/she was not fully independent in a particular ADL or IADL task and no informal caregiver was available to provide assistance with this task. Because of project-to-project variations in the rating of informal support availability, the data may at times somewhat overestimate the actual extent of informal caregiver support. There was not enough detailed data to discriminate between partial situations; i.e., activities where a caregiver was present but provided insufficient help. While a more discriminating level of analysis would be desirable, the measures used to assess unmet ADL needs and unmet IADL needs do provide a better estimate of service needs than do measures of functional impairment alone. Measures of functional impairment alone tend to substantially overestimate the extent of a client's formal service needs because they do not take into account those service needs which are met by informal caregivers such as spouse, children, other relatives, and friends.

While most of the projects collected some information on the number and type of formal caregivers, data on the assistance provided with specific ADL and IADL activities were not gathered in four of the ten projects. Therefore, it was not possible to undertake extensive cross-site comparisons of the role of the informal support system in reducing functional service needs. However, data from the six projects for which this information was available provides adequate information to discuss some overall patterns.

Table 4.4
Service Need Indicators: Unmet Functional Needs
in ADL and IADL after Accounting for
Services Provided by Informal Supports

Activity	% Functionally Impaired	% Unmet Functional Needs	% Reduction in Service Needs	Activity	% Functionally Impaired	% Unmet Functional Needs	% Reduction in Service Needs	Activity	% Functionally Impaired	% Unmet Functional Needs	% Reduction in Service Needs
SOUTH CAROLINA (n = 299) ^a											
ADL Activity											
Bathing	96%	38%	58%	SAN DIEGO (n = 349) ^a	ADL Activity	52%	31%	ACCESS 1 (n = 5,915) ^b	ADL Activity	79%	21%
Dressing	84%	36%	48%			33%	23%			--	--
Toileting	83%	33%	50%			22%	5%			37%	15%
Transferring	64%	--	--			--	--			46%	34%
Feeding	59%	25%	34%			13%	2%			49%	12%
IADL Activity						IADL Activity					
Meals	86%	32%	54%	FLORIDA (n = 297) ^a	IADL Activity	80%	50%	ADL Activity	Meals	50%	30%
Shopping	94%	27%	67%			15%	49%			96%	42%
Transportation	--	--	--			73%	34%			53%	42%
Medications	76%	--	--			71%	34%			85%	57%
Housekeeping	95%	37%	58%			3%	56%			94%	36%
						Housekeeping					
NEW YORK CITY (n = 304)											
ADL Activity											
Bathing	92%	55%	40%	MOSP (n = 1,965) ^b	ADL Activity	47%	10%	FLORIDA (n = 297) ^a	ADL Activity	49%	43%
Dressing	76%	38%	35%			35%	17%			23%	23%
Toileting	53%	23%	30%			16%	7%			13%	0%
Transferring	53%	26%	19%			24%	--			7%	13%
Feeding	35%	9%	26%			7%	3%			5%	3%
IADL Activity						IADL Activity					
Meals	96%	38%	58%	ADL Activity	IADL Activity	--	--		Meals	51%	37%
Shopping	100%	20%	80%			87%	29%			89%	5%
Transportation	97%	60%	37%			47%	18%			88%	87%
Medications	54%	10%	44%			51%	7%			20%	13%
Housekeeping	100%	46%	54%			78%	8%			84%	71%

^aPercentages are based on the total number of instruments where caregiving data were available.

^bACCESS 1 sample includes age 65 and older only.

The significance of the informal caregiving system in reducing the gap between functional impairment and formal service needs is shown in Table 4.4. In each of the projects for which data on informal caregiving in ADL and IADL activities were available, there was a considerable reduction in formal service needs after accounting for assistance provided by informal caregivers. The impact is more pronounced, however, in some projects than in others. For example, reduction in the need for formal services in a specific IADL activity ranged from an 87% reduction in the need for formal service in the area of transportation in the Florida Pentastar project to an eight percent reduction in the need for housekeeping services from a formal service provider in MSSP. In general two overall patterns were observed in the data.

First, informal caregivers were providing substantial amounts of service to their older relatives and friends. Furthermore, informal caregivers were providing the greatest amount of assistance in those projects where the clients were the most functionally impaired. For example, the greatest reduction in the need for formal services occurred in the South Carolina CLTCP, New York City HCP, and ACCESS I projects which served clients who were substantially more functionally impaired than clients in the San Diego LTCF, MSSP and Florida Pentastar projects. Interestingly, it appears that the greater the level of need, the more willing the informal support system was to provide at least some assistance. One implication of this finding is that considering informal support systems does not substantially change the relative levels of service needs across project treatment groups.

Another pattern which emerged was that in each of the projects, the reduction in formal service needs after accounting for services provided by informal caregivers was much greater in Instrumental Activities of Daily Living than in Activities of Daily Living. This may indicate that informal caregivers are more willing to provide assistance in areas other than personal care. It may also indicate that informal caregivers do not feel comfortable providing more highly skilled personal care services, and therefore concentrate their time providing assistance in

those areas which do not require special expertise such as shopping or housekeeping.

The fact that the informal system was providing so much help may also indicate that the clients in community-based long-term care systems have a good potential for remaining in the community, if unmet service needs are augmented by the formal long-term care system. On the other hand, it may be that newly introduced formal long-term care services have actually reduced the level of support previously provided by informal caregivers. Stated differently, informal caregivers may be using these new service to replace services they were providing prior to the advent of the new service program.

These findings clearly raise more questions than they answer. Because the role of the informal support system is potentially an important factor in reducing the need for services provided by the formal long-term care system, this issue is the focus of a special study reported in Chapter 7. For three projects for which detailed data on informal supports were available (San Diego LTCF, New York City HCP, South Carolina CLTCP), analysis was undertaken to determine each demonstration's effect upon informal support system behavior over time. This analysis addresses the issue of whether newly introduced formal long-term care services replace rather than supplement existing care provided by the informal support system.

To summarize, the baseline characteristics of the client groups were compared on a range of demographic and service need variables. While there was some variation among the projects on each of the measures, the major difference found among projects was the clients' level of functional impairment. The New York City HCP, South Carolina CLTCP, ACCESS I and On Lok projects served clients with the highest level of functional impairment. Project OPEN served clients with the lowest level of functional impairment. The other projects -- Wisconsin CCO, San Diego LTCF, Triage II, MSSP, and Florida Pentastar -- served clients whose level of functional impairment fell within a middle range relative to the other projects.

In the following section, the discussion turns to an analysis of how successful the demonstration projects were in identifying clients

belonging to their intended target groups. Projects all intended in their targeting to acquire client groups who were at risk of institutionalization. The notion of the relative success of the projects in achieving "at risk" groups is introduced, and then pursued in succeeding chapters.

THE TARGET POPULATION AND CLIENT GROUP COMPOSITION

During the planning and development phase of each of the demonstration projects, one of the most critical tasks undertaken was to define the target population which the program intended to serve. The definition of the target population can have a very serious impact on program operations and program outcomes. In short, serving a more (or less) impaired group of clients than intended can significantly alter the client and cost outcomes of a demonstration program.

As the analysis of client characteristics at baseline revealed, the HCFA demonstration projects did not serve a homogeneous segment of the aged population. Some of the projects served a very dependent and impaired older population, while others served a relatively independent and healthy older population. When interpreting client and cost outcomes, it is important to remember which segment of the aged population a program intended to serve as well as the characteristics of the clients who were actually served.

Eligibility Criteria

The eligibility criteria used among the projects to define their target populations varied considerably. Figure 4.3 presents information from case studies and other project documents describing both formal project eligibility requirements and project goals with respect to the composition of the target population.

All projects established some criteria based on the demographic characteristics of potential participants including age, residence within a program's catchment area, and eligibility for entitlement program services (i.e. Medicare or Medicaid). These three demographic criteria were clearly defined: applicants meeting the demographic

Figure 4.3
Target Populations and Eligibility Criteria

Project	Target Population	Eligibility Criteria
New York City	A group in need of moderate amounts of services similar to those provided by Medicaid, but whose resources (assets and income) were above Medicaid eligibility but too limited to afford private pay home care services on a continuing basis. This target group is homebound and chronically ill.	<ul style="list-style-type: none"> • over 65 years old • enrolled in Medicare Part B • chronically ill, functionally impaired, and/or mentally disabled • in need of assistance to go out of doors, up and down stairs, or with personal care to the extent that the participant needs between 12 and 20 hours of homemaker/personal care per week • not receiving Medicare-reimbursed services through a certified HHA on an ongoing basis • residing within the catchment area of the site
San Diego	The target population of the project are those deemed "at risk." "At risk" is defined to include those persons 65 and older who are in need of intensive or intermediate levels of home care as a result of a prior hospital admission; those who are in need of health or social support services at the intermediate or intensive level in order to avoid inappropriate placement in a long-term care facility; and those who require services at a maintenance or basic level of care in order to remain in their homes."	<ul style="list-style-type: none"> • permanent resident of San Diego County • age 65 or older • Medicaid-eligible <p>A client must also meet one or more of the following criteria:</p> <ul style="list-style-type: none"> • at risk of long-term institutional placement • at risk of frequent acute hospital admissions • subject to acute exacerbation of a chronic disease • unable to maintain self at home without assistance in activities of daily living • have received home health services for unstable health problems; is now stable but requires education and monitoring to maintain a stable state • have a stabilized chronic or non-homebound status that restricts the client from receiving traditional home health services, but is in need of long-term care services
Florida	The project seeks to divert aged persons from institutions by catching them early in their long-term care "career," before their physical functioning and social support status deteriorates to the point where a nursing home application is made. Their target is the Medicaid recipient at risk of institutionalization within the next 12 months; most likely the SSI eligible over 70	<ul style="list-style-type: none"> • Medicaid-eligible • age 60 or older • resident in one of the five county sites • appear to be at risk of institutionalization within 12 months based on initial screening <p>A client must also meet one or more of the following five conditions:</p> <ul style="list-style-type: none"> • unable to perform daily activities without over-exertion

CONTINUED

Figure 4.3 (continued)

Project	Target Population	Eligibility Criteria
Florida (cont.)		<ul style="list-style-type: none"> • cannot attend to daily living activities involving shopping, paying bills, marketing, and personal business without a strong possibility of being exploited because of a mental or physical disability • coping mechanisms are inadequate to compensate for the disability • needed services are either not available or participation in existing services is not appropriate • regular help and assistance from families, friends, church groups, etc., is not available
MSP	The project attempts to postpone or eliminate nursing home admissions by targeting individuals who are too independent for nursing homes, but too dependent to function in their homes without help.	<ul style="list-style-type: none"> • residence in one of the MSP service areas • 65 years or older • Medical (Medicaid)-eligible <p>In order to be accepted as a client, an individual must satisfy MSP's admission criteria and its evaluators sampling scheme: 50% community residents, 40% hospital inpatients, 10% recent SNF admissions.</p> <p>Hospital sample:</p> <ul style="list-style-type: none"> • hospital inpatient awaiting discharge SNF sample • residence in site service area prior to SNF admission • no prior SNF admission <p>Community sample -- satisfaction of at least one of six conditions:</p> <ul style="list-style-type: none"> • about to be placed in an SNF • recently placed in an SNF (a small number of individuals were identified who were thought to be readily returned to their homes if services were available) • recently hospitalized • about to be discharged from an SNF • 75 years or older • judged by the project assessment team to be disoriented or who recently lost a spouse or long-term residence

CONTINUED

Figure 4.3 (Continued)

Project	Target Population	Eligibility Criteria
On Lok	Functionally dependent adults	<ul style="list-style-type: none"> • residence in catchment area • 55 years or older • 90% of clients must be Medicare-eligible • certified at the SNF or ICF level
Project OPEN	Aged individuals who are "at-risk" of becoming more dependent on the formal system of care	<ul style="list-style-type: none"> • live within the catchment area • be 65 or older • eligible for Medicare Parts A and B • must be aware enough to respond to questions asked in the assessment process • must have a problem focus and require some assistance in order to live independently • the client must meet at least one of the following criteria: <ul style="list-style-type: none"> -- acute care hospitalization within the last 30 days -- skilled nursing hospitalization within the last 30 days or have been eligible for such care -- suffered a major life crisis within the last year -- judged by interviewer to have difficulty with independent living -- require assistance with personal care
South Carolina	Given the project objectives of exploring the impacts of an experimental system including community assessments, preadmission screening of nursing home applicants, coordinated community services, while also developing a data base on patterns of long term care use, the target was institution level clients and those with ADL impairment.	<ul style="list-style-type: none"> • residing in Spartanburg, Union, or Cherokee Counties • age 18 years or older • Medicaid-eligible • has a need for a level of care provided in a long-term care facility as defined by Medicaid criteria, or ranks as "dependent" in at least two elements of the Activities of Daily Living (ADL) scale
ACCESS I	All people in Monroe County needing long-term care services. The project focuses on control of all institutional admissions.	<ul style="list-style-type: none"> • residence in Monroe County • 18 years or older • in need of long-term care services (defined to be 90 days or more) • ICF or SNF level of care for services

(CONTINUED)

Figure 4.3 (continued)

Project	Target Population	Eligibility Criteria
Triage II	Aged individuals at "high risk" of institutionalization and who would benefit most from the Triage intervention	<ul style="list-style-type: none"> • residence in target region • over 65 years of age • enrolled in Medicare Parts A and B • a need for assessment, coordination, monitoring, and health education • a need for both medical and social services • an unstable situation, characterized by medical/social problems, a poor informal social support system, environmental problems, or financial problems • the potential for deinstitutionalization (for those individuals already in institutions)
Wisconsin	<p>The population to be served are Medicaid eligible, functionally disabled elderly or other disabled adults who:</p> <ol style="list-style-type: none"> 1. Are at the point of discharge from a hospital or other acute facility and who, except for the availability of CCO services, would be placed in a long-term care institution 2. Are residents of nursing homes or other long-term facilities but for whom institutional placement is determined to be unnecessary and are judged to be appropriate candidates for CCO services 3. Are residing in the community but are "in crisis" and imminently in danger of institutionalization; these are persons whose disabilities and level of functioning are such that without intervention, placement would likely occur 4. Are residing in the community and in need of home services in order to inhibit or avoid deterioration and/or promote maintenance or rehabilitation to assist them to remain in the community as long as reasonable possible <p>In general, persons with functional disabilities related to medical conditions (physical, mental, emotional) for whom non-institutional care is reasonable, will become eligible for CCO services. "Medically related" functional disabilities need not include physician care.</p>	<ul style="list-style-type: none"> • residence in Milwaukee • age 65 and older • Medicaid-eligible • risk of institutionalization and cutoff points on the functional assessment instrument score (70% of the clients could score no higher than +20 on the CTRS; 30% of the caseload could exceed the +20 limit if compelling reasons were documented by the staff)

criteria were eligible for program participation and applicants who did not meet the criteria were referred elsewhere for services.

Beyond this initial determination of eligibility based on demographic criteria, a second set of eligibility criteria were used by all the projects to determine whether a potential client was a member of the project's target population. These criteria were designed to determine if the person was "in need" of services or "at risk" of institutionalization. Unlike the demographic eligibility criteria which were clearly defined, the majority of the projects used multiple criteria in an attempt to define eligibility standards related to the functional status of the target population.

Multiple Functional Status Criteria

The use of multiple functional status criteria was the norm among the demonstration projects. There was also a noticeable absence of eligibility criteria reflecting a clients' level of functional impairment after accounting for assistance provided by the informal support system. The ambiguity and lack of specificity of the functional status criteria undoubtedly reflects the "demonstration" nature of these projects. Each project was grappling with the difficult problem of how to identify and operationally define a target group for whom their particular configuration of long-term care service would be the most cost-effective.

Only three projects, ACCESS I, On Lok and South Carolina CLTCP, specifically required that potential clients must be assessed as eligible for an ICF or SNF level of nursing home care to receive expanded services. In each of these projects, clients were judged eligible for institutional care by a multidisciplinary assessment team. In addition, at On Lok, an outside assessor was responsible for making a final determination about whether a potential client was qualified for an institutional level of care. Results of the On Lok project, where high risk for institutionalization seems to have been obtained in its client group, must be qualified and compared, for example, with findings from the Georgia AHS project. In that project, external certification of level of care did not result in treatment or comparative groups with

much probability of SNF or ICF placement.

With the exception of the New York City HCP, all of the other projects included eligibility criteria specifying that clients should be "at risk" of institutionalization. However, the operational definitions of "at risk" varied considerably, and multiple criteria were frequently used. For example, as the information in Figure 4.3 shows, six of the eight projects included at least four criteria related to institutional or functional status. In each of these projects, there was a considerable range of functional impairment within which a potential client could fall and still be eligible for the program.

The eligibility criteria developed by the San Diego LTCP illustrate the use of multiple criteria relating to institutional or functional status. To be eligible for the San Diego program, in addition to meeting the demographic criteria related to age, Medicare eligibility, and residence within the county, clients were also required to meet one or more of the following criteria:

- at risk of long-term institutional placement;
- at risk of frequent acute hospital admissions;
- subject to acute exacerbation of chronic disease;
- unable to maintain self at home without assistance in activities of daily living;
- have received home health services for unstable health problems, is not stable but requires education and monitoring to maintain a stable state; or
- have a stabilized chronic or non-homebound status that restricts a person from receiving traditional home health services, but that person is in need of long-term care services.

The range of clients who would be qualified for the program based on the above targeting criteria reflects the difficulty which projects often experienced in identifying their target populations. Although the projects intended to target their services to a population "at risk" of institutionalization, there existed at the time no consensus in the field of long-term care concerning what client characteristics would

accurately predict which subgroup of the aged population were truly at risk of institutionalization and would enter a nursing home if community-based services were not available.

Characterizing Project Targeting Goals

As noted above, each of the projects varied in its approach to operationalizing the definition of the target population. Variations reflect the different goals and objectives of the projects, as well as the state of the art with respect to assessment technology at the time the projects were developed. To more clearly specify the intended target populations of these projects, BPA developed a scheme for classifying projects according to three different types of targeting goals. The targeting goals define the point at which a demonstration project intends to intervene in a client's life as a user of long-term care services by classifying projects according to clients' location in the long-term care system at the time of admission to the program, (i.e., hospital, nursing home, or community). The targeting goals also classify projects according to the most likely projections of their clients' future service use patterns based on the projects' primary service goals. By differentiating projects along these two dimensions, they can be placed into three principal groups which characterize their targeting goals:

- Group 1: Projects whose intended clients were in a variety of settings (e.g., at home, in an ICF/SNF, in a hospital) with need for either institutional or community long-term care services. These projects seek individuals in all long-term care settings either as they apply for nursing home admission or because of perceived service needs. Clients can require varying intensities of service, ranging from institutional care to home care. Projects in this group include ACCESS I, South Carolina CLTCP and On Lok.
- Group 2: Projects whose intended clients were in a variety of settings (e.g., at home, in an ICF/SNF, in a

hospital) with the need for community services in order to avoid institutional placement or to return to the community. These projects did not plan or approve institutional stays for their clients; their major role was the coordination and/or provision of noninstitutional services. Projects in this group include MSSP, Triage II and Wisconsin CCO.

- Group 3: Projects whose intended clients were in the community with need for community services. The major goal of these projects was maintenance of community tenure and avoidance of repeat hospitalizations. Unlike the other two project types, these projects did not primarily attempt to divert institutional applications or facilitate institutional discharge. Projects in this group include New York City HCP, Florida Pentastar, Project OPEN and San Diego LTCP.

Projects in the first targeting group include South Carolina CLTCP, ACCESS I and On Lok. South Carolina CLTCP and ACCESS I required that clients be certified as needing the level of service provided in an ICF or SNF in order to receive waived services. Such certification occurred during the preadmission screening process that distinguished these programs. Intended clients could receive either institutional or community services to meet their needs. On Lok's program also arranged and provided for both community and institutional services, and required that all clients be independently certified as eligible for an ICF or SNF level of care even though the majority of the clients were in the community at the time of the initial health assessment. However, all three were able to accept clients who were in the hospital, a nursing home, or the community at the time of referral. (Triage I was not placed in the first targeting category because, although the program had waivers to provide nursing home care, it did not intend to serve clients who were permanent nursing home residents at intake or were about to become permanent nursing home residents.)

Projects in the second targeting group included MSSP, Wisconsin CCO, and Triage II. Triage II explicitly targeted impaired individuals residing in the community as well as those who could potentially be deinstitutionalized. Although the project did not explicitly target individuals awaiting discharge from acute care hospitals, admission policies allowed these individuals to be accepted into the program. MSSP and Wisconsin also targeted individuals who were applying to nursing homes, individuals in acute care hospitals awaiting discharge, and individuals in the community who were in need of community-based long-term care services. None of the projects in the second targeting group had the authority to approve institutional stays for their clients and the emphasis was on serving clients who could avoid institutional admissions with the provision of expanded community services.

Projects in the third targeting group included New York City HCP, San Diego LTCP, Project OPEN, and Florida Pentastar. These projects did not intend to serve clients who were already placed in a nursing home or hospital at the time of admission to the program. In most cases, these projects intended to find their clients in the community and then assist the clients in maintaining community tenure. However, the projects in this targeting group differed in that New York City and Florida were more oriented towards serving clients for whom there was imminent danger of nursing home admission, while Project OPEN and San Diego were more oriented toward serving clients who were at risk of frequent acute hospital admissions if appropriate community services were not available.

Discussion of Targeting Goals and Actual Client Group Composition

Because each of the projects used multiple criteria to determine client eligibility for program participation, it was not possible to undertake a detailed comparison of characteristics of clients found eligible and served by the projects with characteristics of the intended target population. However, it was possible to make some comparisons by classifying projects on two dimensions: (a) targeting goals, and (b) clients' functional status. This classification clearly identifies the projects which targeted a population at high risk of institutionaliza-

tion and also actually served a population with high levels of disability similar to that which is found among the majority of the nursing home population.

Figure 4.4 categorizes the projects according to their primary targeting goal and the overall level of functional impairment of program clients at the time of admission to the program. As described earlier in this chapter, level of functional impairment was based on each project's composite functional impairment score which indicates each project's position in rank order, ranging from most impaired to least impaired, when three measures of functional impairment (ADL, IADL and mental status) are totaled and averaged. The composite functional impairment score could range from one to ten. Projects with a score of 1 to 2.9 were classified as serving clients with minor functional impairment; projects with a composite functional impairment score of 3.0 to 5.9 were classified as serving clients with moderate functional impairment; and projects with a composite functional impairment score of 6.0 or higher were classified as serving clients with severe functional impairment.

South Carolina CLTCP, ACCESS I and On Lok targeted their services to individuals in a broad variety of long-term care settings (i.e., hospital, nursing home, or community) with a need for either institutional or community services, and, in fact, these three projects did serve clients who were severely impaired in functional status relative to clients in the other demonstration projects. These results underscore the importance of considering an individual's current relationship with the formal care system (e.g., application for nursing home admission) in defining a target group.

Wisconsin CCO, MSSP and Triage targeted their services to individuals in a broad variety of long-term care settings, with need for community services. These three projects actually served clients who were moderately impaired in functional status compared to clients in the other demonstration projects. Since these projects did not target their services to individuals who could not be reasonably maintained in the community, it was anticipated that clients in these projects would be

Figure 4.4

Targeting Goals and Clients' Functional StatusTargeting Goals

<u>Group 1:</u>			<u>Group 2:</u>			<u>Group 3:</u>		
Intended clients are in a variety of settings with need for institutional or community services			Intended clients are in a variety of settings with need for community services			Intended clients are in the community with need for community services		
<u>Project</u>	<u>Functional Score¹</u>		<u>Project</u>	<u>Functional Score¹</u>		<u>Project</u>	<u>Functional Score¹</u>	
South Carolina	8.6		Wisconsin	5.1		New York City	9.3	
ACCESS I	7.5		MSSP	3.9		San Diego	3.9	
On Lok	7.0		Triage II	3.1		Florida	4.4	
						OPEN	1.2	

¹The project's functional impairment score could range from 1 to 10. The higher the score, the greater the functional impairment of the client group.

less functionally impaired than clients served by projects in the first targeting group.

New York City HCP, San Diego LTCP, Florida Pentastar and Project OPEN targeted their services to individuals in the community with need for community services. Based on their targeting goals, it was anticipated that these projects would serve clients who were less functionally impaired than clients in the other projects whose intended target population included individuals already placed in nursing homes or eligible for nursing home admission. This was true for only three of the four projects -- San Diego LTCP, Florida Pentastar, and Project OPEN. The New York City HCP, on the other hand, served clients with considerable functional impairment. Home Care Project clients were severely impaired relative to clients in the other demonstration projects, even though all were identified in the community.

Based on their targeting goals, these data suggest that the New York City HCP may have served clients who were more functionally impaired than the population for whom the program was designed. Alternatively, these data, along with utilization findings presented in Chapter 6, suggest that there are at least two distinct subgroups of elderly residing in the community. One subgroup of aged residing in the community is similar to the nursing home population and is moderately-to-severely impaired, but has managed to remain in the community through services provided by the informal and/or formal service system. While potentially eligible for nursing home placement, such individuals actually have relatively low likelihood of placement, again suggesting that client relationships to the long-term care system must be considered along with disability and informal support features in target group definition. The other subgroup residing in the community is less functionally impaired but beginning to experience some difficulty in performing normal activities of daily living. This is the group served by the other projects in "Group 3," discussed above (Florida Pentastar, Project OPEN, San Diego LTCP). This subgroup of the aged population is probably neither nursing-home-eligible nor nursing-home-bound. Therefore, given the range of functional impairment which can be found among potential clients living in the community, community-oriented programs

need to define clearly their eligibility criteria if they are to obtain a target population truly at risk of institutionalization.

SUMMARY

The baseline characteristics of the client groups of ten of the demonstration projects were compared on a range of demographic and service need variables. The major differences found among the projects were the clients' levels of functional impairment. The New York City HCP, South Carolina CLTCP, ACCESS I, and On Lok projects served clients with the highest levels of functional impairment. Five other projects -- Wisconsin CCO, San Diego LTCP, Triage II, MSSP, and Florida Pentastar -- served clients whose level of functional impairment fell within a middle range, relative to the other projects. Only one project, Project OPEN, served clients with relatively low levels of impairment.

The implications of the composition of the client groups are several. First, clearly not all projects served the same segment of the frail aged population. Second, while all the projects (except the New York City HCP) intended in their targeting to acquire clients who were at risk of institutionalization (and thus would use institutional care if the expanded community services were not available), they went about this task in varying ways, used multiple and different functional status criteria, and met with varying degrees of success in achieving their intended target populations. For example, only three projects, ACCESS I, On Lok and South Carolina CLTCP, required that potential clients be assessed as eligible for an ICF or SNF level of nursing home care to receive expanded services.

Third, because variations in client group composition reflect different project models and goals, as well as the state of the art of assessment technology in long-term care, BPA developed a scheme for classifying projects according to three different targeting goals. The targeting goals define the point at which a demonstration project intervenes in a client's life as a user of long-term care services by classifying projects according to clients' location in the long-term care system at the time of admission to the program (hospital,

nursing home or community). This scheme has proved extremely useful in analysis of these diverse projects.

Using this classification scheme and information on client functional status, BPA analyzed the projects according to their primary goals, targeting goals and the level of impairment of clients at the time of admission to the program. This analysis clearly identified the projects which targeted and, in fact, served a population at apparent high risk of institutionalization, and which also served a population with high levels of disability.

On the one hand, the three projects whose clients are the "who-but-fors" (who but for the existence of the demonstration would be expected to enter nursing homes) face the challenge of substitution: that is, achieving humane community tenure for their clients without increasing public costs. The challenge of the other projects who adopted a more preventive approach is more difficult: they must demonstrate that continued community tenure, with an expanded set of services and little likelihood of impacting nursing home use, can result in more favorable client outcomes without increasing public costs of care. These issues are addressed in the following two chapters.

NOTE

¹Though the Oregon FIG/Waiver project did result in promulgation of a standardized assessment form, data collection protocols were not standardized, assessment variables were not comparably measured, and no computerized data base was constructed during the demonstration. The Texas ICF-II project did produce computerized assessment data sets on various relevant sub-populations and time frames, and these data may be analyzed in a supplementary report, evaluation resources permitting.

V. PARTICIPANT OUTCOMES

INTRODUCTION

A major impetus for the development of community-oriented long-term care services was the poor quality of care in nursing homes which have traditionally been the primary providers of formal long-term care services for the aged. Community-oriented services were expected to impact on quality of care and client outcomes in at least two important ways. First, community-oriented care was expected to fill a preventive role by improving or at least maintaining the client's physical and mental functioning so the person could either delay or avoid the need for nursing home care. Second, community-oriented care was expected to substitute for nursing home care by providing an array of services which would be at least as effective as nursing home care in maintaining the older person's health and functional status. Both of these expectations about the impact of community-based services on client outcomes raise the issue of whether community-based care is as effective in meeting the health and social service needs of the aged as the care traditionally provided in the long-term care system.

This chapter reports findings on the impacts of five of the HCFA demonstration projects on participant outcomes. Two principal questions are addressed:

- (1) Do community-based service programs maintain or improve the physical and mental functioning of clients compared to a similar group of elderly utilizing services in the traditional health care system?
- (2) Do clients in a community-based service program have a lower mortality rate than a similar group of elderly utilizing services in the traditional health care system?

Prior Studies

Similar questions have been raised in a number of studies of community-based long-term care projects, including some of those to be examined in this evaluation. There is a general consensus that available research does not permit unequivocal conclusions about the ability of community-based care systems to maintain or improve the functional status of clients or to reduce the mortality rate. Existing studies show mixed results (see, for example, Bryant et al., 1974; Hicks B., et al., 1979; Kalish et al., 1975; Katz et al., 1972; Nielson, et al., 1970; Skellie, et al., 1982; and Weissert, et al., 1980). In general, most projects providing some type of community-based services have found that program participants have slightly more favorable outcomes with respect to functional status than do similar individuals not receiving such care. However, in most projects, significant improvement in health and functional status has not been found. On measures of mortality, community-based services appear to have a positive, though perhaps not a strong impact on survival rates. Several studies have shown favorable program outcomes for survival occurring early in the study period. Over more extended periods of time, however, mortality rates for the treatment and comparative groups tended to converge. As illustrated below, the findings from BPA's evaluation of community-oriented long-term care programs appear to validate these earlier studies.

Overview

The first section of this chapter briefly discusses some of the methodological issues which had to be addressed in the evaluation of participant outcomes, and then describes the data set and the analytical plan. The second section presents participant outcomes for the treatment and comparative groups within each of the demonstration projects on a standard set of functional status measures and mortality. The third section presents an analysis of the patterns and trends which emerged across projects on measures of participants' functional status over time.

METHODS AND MEASURES

The cross-site evaluation of participant outcomes was faced with a number of methodological concerns related to the reliability and validity of social experiments. Because of the administrative policies and practices adopted by HCFA in developing the demonstration projects, not all programs were targeted toward similar populations, utilized a similar intervention strategy, provided a similar package of services, or were funded during the same time period. Furthermore, the projects adopted widely different approaches to the selection of participants in the treatment and comparative groups, and utilized varying techniques and measures to assess and reassess participants in the treatment and comparative groups.

Because of these differences, comparisons of the projects and the formation of generalizations concerning community-oriented long-term care programs had to be undertaken with great care. It was necessary to to separate variation in project performance associated with differing interventions and target populations from variations in research designs and data collection protocols and procedures. The techniques used to eliminate or reduce the effect of confounding factors are summarized below.

- A common data set that maximized the strengths of the data available from each project, while including key variables which could be compared across projects, was constructed, and standardized measures of participant outcomes were used in the analysis.
- Problems in differential validity were resolved through the use of measures, whenever possible, that had known psychometric properties.
- Inter-item reliability was assessed for all indices, and indices with low reliability were excluded from the analysis.
- Differential attrition between the treatment and comparative groups over time, and baseline differences between the treatment and comparative groups were carefully

examined, and in the projects where differences did occur, bias was controlled in the analysis. Detailed analysis related to these two methodological concerns for each of the five projects under consideration are presented in Appendix A.

For further discussion of the research methodology, refer to Chapter 3 and Appendix C.

The Sample Sites

As discussed earlier, five of the demonstration projects were selected for an in-depth analysis of participant outcomes. Each individual project evaluation is included as a separate volume in Appendix A. The five sites included in the cross-site analysis of participant outcomes and the size of the treatment and comparative group samples are:

<u>Project</u>	<u>Sample Size</u>	
	<u>Treatment Group</u>	<u>Comparative Group</u>
New York City HCP	504	200
On Lok CCODA	69	70
Project OPEN	220	118
San Diego LTCP	555	328
South Carolina CLTCP	539	553

Figure 5.1 categorizes the five projects selected for the in-depth evaluation on three key characteristics (described and discussed in Chapters 2 and 4) which can be expected to have an impact on participant outcomes. The three key characteristics are: the intervention approach, the targeting goal, and the clients' level of functional impairment.

With respect to intervention approach, the five sample projects represent three of the five intervention approaches identified among the 13 demonstration projects: direct control of institutional admissions (South Carolina); consolidation of service delivery (On Lok CCODA); and upgrading the home care package (San Diego LTCP, New York City HCP, and Project OPEN). The two intervention approaches not represented are:

Figure 5.1
Key Characteristics of the Five Projects
in the Cross-Cutting Evaluation of Participant Outcomes

Project	Intervention Approach	Targeting Goals	Clients' Level of Functional Impairment
South Carolina CLTCP	Direct control of institutional admissions	Intended clients are in a variety of settings with need for institutional or community services	Severe Impairment
On Lok CCODA	Consolidate service delivery in single agency	Intended clients are in a variety of settings with need for institutional or community services	Severe Impairment
New York City HCP	Upgrade the home care package	Intended clients are in the community with need for community services	Severe Impairment
San Diego LTCP	Upgrade the home care package	Intended clients are in the community with need for community services	Moderate Impairment
Project OPEN	Upgrade the home care package	Intended clients are in the community with need for community services	Minor Impairment

development of a community-based long-term care service system, and coordination of existing systems and filling gaps. However, these two intervention approaches were utilized primarily by the earlier HCFA demonstration projects, many of which are no longer operational in their original form.

With respect to targeting goals, the five projects included in the in-depth evaluation represent two of the three types of targeting goals identified among the 13 demonstration projects. The South Carolina CLTCP and On Lok CCODA both targeted clients from a variety of long-term care settings with need for either institutional or community services. These two projects also served clients who were severely impaired relative to the other demonstration projects.

The New York City HCP, San Diego LTCP, and Project OPEN all targeted their services to clients in the community who needed community services. However, the level of functional impairment found among clients in these three projects varied considerably. The New York City HCP served a severely impaired client population, while the San Diego LTCP served a moderately impaired client population, and Project OPEN served a client population with minor impairment relative to the other demonstration projects.

Thus, the projects selected for the in-depth evaluation of participant and cost outcomes are fairly representative of the range of characteristics found among the 13 demonstration projects included in the overall evaluation.

The Data Set

Figure 5.2 lists the variables included in BPA's evaluation of participant outcomes. Much of the data set is parallel to variables used to assess the baseline characteristics of study clients, introduced in the preceding chapter. For a more detailed description of these variables, refer to Chapter 4. These variables represent participant characteristics which can be expected to change as a result of participation in the intervention.

Activities of Daily Living (ADL) are composed of five personal care items: bathing, dressing, toileting, transfer-

Figure 5.2

Variables in the Cross-cutting Evaluation of Participant Outcomes*Functional Status

Activities of Daily Living (ADL)

Instrumental Activities of Daily Living (IADL)

Mental Status (MSQ)

Mortality

Survival rate during the first 12 months of the demonstration period

*Participant outcomes related to change in service needs (i.e., Unmet ADL Needs and Unmet IADL Needs) are not included in this chapter. The role of the informal support system in reducing the need for services provided by the formal long-term care system is the focus of a special study which is reported in Chapter 7.

ring, and feeding. A participant's adjusted score could range from 0, representing no impairment, to 5, representing impairment on all five ADL items.

Instrumental Activities of Daily Living (IADL) are composed of five self-maintenance activities: meal preparation, shopping, transportation, self-medication, and housekeeping. A participant's adjusted score could range from 0, representing no impairment to 5, representing impairment on all five IADL activities.

Mental Status (MSQ) represents each project's assessment of participants' cognitive functioning; individual items used by each project varied somewhat. For purposes of the analysis, all scores were adjusted and a participant's score could range from 0, representing no impairment to 10, representing major impairment.

Mortality: Although many of the projects did not include any specific hypothesis about mortality or the ability of the project to retard or reduce the rate of death, mortality is a measure of considerable interest when studying an aged population. For BPA's national evaluation, an adjusted mortality rate was calculated to determine the survival rate of each project's treatment and comparative group during the first 12 months of the demonstration period.

As noted earlier, each of the projects used a somewhat different set of measures to assess participant outcomes. In deciding upon the measures to be used in the cross-site comparison of participant outcomes, BPA chose to use only those items which were available across each of the projects and were most in conformance with measures which have been widely used and tested in other research conducted on an older population. These criteria resulted in the use of a much narrower range of health and functional states measures than were usually available at the individual project level. However, the resultant data set can be analyzed and interpreted with greater confidence than would be possible

if a broader range of less reliable measures had been used. A more detailed analysis of participant outcomes by project, which includes a number of measures that were not used in the cross-site evaluation, is presented in the five volumes of Appendix A.

The Analytical Time Frames

Analysis of participant outcomes was conducted on all participants in the treatment and comparative groups for whom a six-month and a 12-month reassessment were available. In each project, it was not possible to obtain six-month and 12-month reassessment data on all of the original study participants for a variety of reasons (i.e., death, movement out of the catchment area, drop-outs, etc.). Selective attrition can bias the results on any longitudinal study; therefore, it is important to examine the extent to which individuals with different characteristics were leaving the treatment and comparative groups.

For each project, analysis was undertaken to determine the extent to which the treatment and comparative groups differed for individuals who were still in the study at the time of the six-month and 12-month reassessment intervals. Differences were examined both without adjusting for baseline characteristics and controlling for baseline characteristics using analysis of covariance. A detailed examination of differential attrition between the treatment and comparative groups in each of the projects is found in the individual project reports included as Appendix A. Interestingly, while there were a few overall trends related to attrition, there were no projects in which the differences were statistically significant. Consequently, it was not necessary to control for bias due to attrition when assessing change over time in the treatment and comparative groups on the participant outcome variables.

In each of the projects, the analysis revealed that while the poorer functioning participants are underrepresented among those individuals for whom six-month or 12-month reassessment data were obtained, this pattern was equally true for both the treatment and comparative groups. In addition, while a larger percentage of the comparative group was not reassessed at six or 12 months in each of the projects, these individuals did not tend to differ significantly from

individuals in the treatment group who were not reassessed at six months or 12 months. In summary, all of the analyses indicated that differential attrition did not significantly bias the study results; individuals remaining in the study at both the six-month and the 12-month reassessment periods provide an unbiased sample for determining the effectiveness of the program.

For most of the analysis presented in this chapter, findings are reported for two sample groups: (1) the six-month study sample, which includes all treatment and comparative group participants for whom a six-month reassessment was completed; and (2) the 12-month study sample, which includes all treatment and comparative group participants for whom a 12-month reassessment was completed. These two study samples constitute the database for the analysis of program impacts over time, although in some projects the sample size for the 12-month study sample becomes quite small and the results should be interpreted with caution.

Overview of the Analysis

Three of the demonstration projects -- South Carolina CLTCP, San Diego LTCP, and Project OPEN -- used an experimental research design which randomly assigned participants to the treatment and comparative groups; the other two projects -- New York City HCP and On Lok CCODA -- used quasi-experimental research designs which assigned participants to the treatment and comparative groups based on non-random sampling techniques.

Even among the projects which used the more rigorous experimental research design, there were some differences between the treatment and comparative groups on key variables at the time of the baseline assessment. Furthermore, as the data reported in Chapters 2 and 4 have illustrated, there was also considerable variation among projects on important variables such as the intervention strategy, the target population, and the level of functional impairment among participants of baseline. These differences can potentially introduce bias into the study and raise questions about the validity of the findings. To compensate for these differences, careful steps were taken in the analysis to assess their effects and to consider them in drawing conclusions.

Nevertheless, differences within and among projects remained and placed some limitations on the type of cross-site analyses which could be undertaken with confidence. Two types of analysis were performed: project-by-project analysis of participant outcomes, and cross-site comparisons.

Project-By-Project Analysis

Consistent with the overall analysis plan for the national meta-evaluation, the first step in analyzing participant outcomes was to select the best available approach to analyzing each individual project. In order to adequately control for baseline differences between the treatment and comparative groups, it was essential to perform multivariate analysis at the level of the individual project. To determine if there was a significant treatment impact, analysis of covariance using ordinary least squares, multiple regression was employed. In each project, analysis followed a four-step process. First, all baseline differences between the treatment and comparative group were identified on key variables: demographics, functional status and unmet needs. Second, the effect of covariates representing treatment and comparative group differences at baseline was ascertained. Third, the contribution of the demonstration effect (treatment versus comparative group) to variance in the dependent variable not explained by baseline group differences was tested. Finally, an assessment of the significance of the interaction between the covariates and group assignment was made, and if the interactions were significant, an effort was made to decompose the interaction terms in order to identify subgroups for which there was significant differential impact between the treatment and comparative groups.

As part of the analysis, two multiple regression models were examined. Model one represented a basic analysis of covariance using multiple regression, while the second model represented a fully saturated model including interactions between the treatment group and the covariates. The findings presented in this section are based on the model which best explains differential impact between each project's treatment and comparative groups after controlling for baseline

differences. Three standard measures of functional status were used: ADL, IADL and mental status.

The method of analysis for assessing differential mortality rates between the treatment and comparative groups followed the same conceptual lines as the analysis of covariance used to assess change in functional status between the two groups. The actual procedure used to assess treatment impact on mortality rates within the two groups was the Proportional Hazards General Linear Model, a form of Cox regression which takes into account censored observations (i.e., data in which the actual length of time until death may not be known for some participants because the participant was discharged from the study for reasons other than death). (For a more detailed discussion of the analytical techniques, refer to Chapter 3 and Appendix C.)

Cross-Site Comparisons

Unfortunately, project-by-project variations were too numerous and the sample sizes were too small in some projects to undertake meaningful comparative multivariate analysis. Due to differences among the demonstration projects discussed above, the cross-site analysis focuses on overall trends and patterns related to client outcomes. Statistical tests of significance across sites are not reported because the interpretation can be misleading due to the absence of equivalent controls across projects.

To assess change over time in clients' functional status, an individual transitions approach was used. Individual change scores were developed for three functional status measures (ADL, IADL, and MSQ) to determine if clients in the treatment group improved, remained the same, or declined during each reassessment period. This analysis looks at change over time in functional status for clients served by the demonstration programs. Comparisons are not made with the control or comparative group because baseline differences, which could systematically affect the outcomes, cannot be adequately controlled in this type of analysis.

For such control of baseline differences between the treatment and comparative groups, it was necessary to perform multivariate analysis at the level of the individual project.

PROJECT-BY-PROJECT DEMONSTRATION IMPACTS

Analyses were conducted in each of the five demonstration programs (South Carolina CLTCP, New York City HCP, On Lok CCODA, San Diego LTCP, and Project OPEN) on all treatment and comparative group participants for whom a six-month and a 12-month reassessment were available, to determine if involvement in the community-oriented long-term care program resulted in differences on participant functioning as measured by three standard functional indices -- ADL, IADL, MSQ -- and mortality.

For each of these measures, analysis of covariance was used in order to determine the extent to which observed differences between the treatment and comparative groups at the time of the six-month and 12-month reassessments were statistically significant after controlling for baseline differences between the two groups. Without such controls, it is not possible to determine if observed group differences over time are actually due to the intervention rather than a continuing reflection of baseline differences between the two groups.

Below is a project-by-project summary of demonstration impacts. The detailed discussion of each project's findings is found in Appendix A.

South Carolina CLTCP

South Carolina's research and evaluation methodology employed an experimental design, combining a randomized treatment and control group with a pre-test multiple post-test method. Random assignment occurred after the initial assessment had been completed and after it had been determined that the applicant's level of functional impairment was appropriate for project participation.

However, not all those assigned to the treatment or control groups ultimately became study participants. The final step in project entry involved the determination of Medicaid eligibility, which often took up

to six weeks. During this waiting period, sample attrition occurred for a number of reasons, including death, voluntary withdrawal from the project, movement out of the project area, or ineligibility due to a major change in medical/functional status.

Of the 1,550 individuals who received an initial assessment, 1,092 ultimately became participants in either the treatment group (539 individuals) or the comparative group (553 individuals). The basic characteristics of the project participants did not substantially change between the initial group of individuals assigned to the study samples and those who ultimately entered the project.

At the time of the "last" first assessment prior to program entry for those individuals who ultimately were included in the research study, there were significant differences between the treatment and the comparative group on the following variables: age, ADL, ambulation, assessor-judged caretaker preference about where the client should live, and assessor-judged client preference about where to live. Relative to the comparative group, the treatment group tended to be younger, less impaired in ADL and ambulation, and, based on assessor judgment, a higher proportion of both the clients and the clients' caretakers expressed a preference for living in the community and thus avoiding institutional settings.

In the analysis of participant outcomes related to change in functional status and mortality, an effort was made to control for these baseline differences in the treatment and comparative groups before attributing differences in outcomes to the impact of the project.

Functional Status: South Carolina CLTCP

In Activities of Daily Living (ADL), the treatment group improved at the six-month reassessment, while the comparative group declined in functional status. At the 12-month reassessment, both the treatment and comparative groups improved in ADL functioning. However, when baseline differences between the two groups were controlled, the South Carolina program had no significant impact on functional status in ADL.

In Instrumental Activities of Daily Living (IADL), there was almost no change in functional status for either group at the six-month or the

12-month reassessment interval. Controlling for baseline differences did not reveal any significant program impact in IADL over time.

With respect to MSQ, both the treatment and comparative groups improved in cognitive functioning at the six-month and 12-month reassessment intervals. When baseline differences were controlled, there were no significant differences between the two groups on change in mental status over time.

The results of the analysis of change in participants' functional status at the six-month and 12-month reassessment intervals after controlling for baseline differences are summarized in Table 5.1.

Mortality: South Carolina CLTCP

Within one year of the initial assessment, a somewhat larger proportion of the comparative group (30%) than the treatment group (26%) had died. These differences, however, cannot be attributed to the impact of the South Carolina program without controlling for the baseline differences between the two groups. When these baseline differences were controlled, there was no significant difference in the mortality rate for the treatment and comparative groups.

New York City HCP

The project's research design was a quasi-experimental time-series treatment comparison group design with strata representing four New York City boroughs. The project experienced a number of problems selecting study participants in a non-random manner, and consequently, different methods and sampling frames were ultimately used to select treatment and comparative group participants.

At the time of the initial or baseline assessment, there were significant differences between the treatment and comparative groups on the following variables: race, number of household residents, ADL, MSQ, Unmet ADL needs, and Unmet IADL needs. A significantly larger proportion of the treatment group than the comparative group was Black and lived with others rather than alone. The treatment group was also more impaired in ADL and MSQ, and had more Unmet ADL needs, but fewer Unmet IADL needs than the comparative group. Analysis of covariance was used

Table 5.1

Change in Functional Status over Time: South Carolina
(Analysis of Covariance Using Hierarchical Multiple Regression
to Control for Baseline Differences in the Treatment and Comparative Groups)

Dependent Variable	Variable Sets Added ^a	T-Value	Change in R ²	F-Value of Change
<u>Six-Month Assessment</u>				
ADL (N = 670)	1) Covariates		.304	61.46***
	ADL - Initial Score	-13.24***		
	Assessor-Judged Client Preference	-3.93***		
	Assessor-Judged Caretaker Preference	-1.83		
	Ambulation	1.18		
	Age	-1.19		
IADL (N = 707)	2) Demonstration Effect	.77	.000	.00
	1) Covariates		.288	44.02***
	IADL - Initial Score	-10.43***		
	Assessor-Judged Client Preference	3.96***		
	Assessor-Judged Caretaker Preference	-2.20*		
	ADL - Initial Score	-4.22***		
MSQ (N = 543)	Ambulation	.50		
	Age	-.48		
	2) Demonstration Effect	-.82	.001	.01
	1) Covariates		.442	65.26***
	MSQ - Initial Score	-16.91***		
	Assessor-Judged Client Preference	1.11		
	Ambulation	1.09		
	Assessor-Judged Caretaker Preference	.71		
	ADL - Initial Score	-1.26		
	Age	-.63		
	2) Demonstration Effect	.70	.000	.00
<u>12-Month Reassessment</u>				
ADL (N = 578)	1) Covariates		.272	42.43***
	ADL - Initial Score	-10.89***		
	Assessor-Judged Client Preference	3.76***		
	Assessor-Judged Caretaker Preference	-1.91*		
	Ambulation	1.24		
	Age	-1.80		
IADL (N = 530)	2) Demonstration Effect	-.55	.000	.00
	1) Covariates		.313	36.26***
	IADL - Initial Score	-7.06***		
	Assessor-Judged Client Preference	4.42***		
	ADL - Initial Score	-5.15***		
	Assessor-Judged Caretaker Preference	-.58		
MSQ (N = 440)	Ambulation	.02		
	Age	-1.25		
	2) Demonstration Effect	-1.29	.002	.03
	1) Covariates		.548	80.71***
	MSQ - Initial Score	-18.31***		
	Assessor-Judged Client Preference	1.45		
	Ambulation	1.57		
	ADL - Initial Score	-2.31*		
	Assessor-Judged Caretaker Preference	-.61		
	Age	-2.22*		
	2) Demonstration Effect	1.27	.002	.03

^aVariable definition and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group

ADL: 0-4 = No Impairment to Severe Impairment

IADL: 0-4 = No Impairment to Severe Impairment

MSQ: 0-10 = No Impairment to Severe Impairment

Age: 18-99 = Youngest to Oldest

Ambulation: 0 = Independent; 1 = Impaired

Assessor-Judged Client Preference: 0 = No Preference for Community Living;

1 = Preference for Community Living

Assessor-Judged Caretaker Preference: 0 = No Preference for Community Living;

1 = Preference for Community Living

*p < .05

**p < .01

***p < .001

to control for these baseline differences and determine if the New York City program had a significant impact on participants' functional status over time and mortality.

Functional Status: New York City HCP

On the measure of ADL impairment, both the treatment and the comparative groups improved slightly at the six-month and the 12-month reassessment intervals. Controlling for baseline differences between the two groups, a significant program impact was found only for the 12-month reassessment. However, at both reassessment intervals, the set of interaction terms made a significant contribution to the variance explained in ADL.

An attempt was made to decompose the interaction terms by identifying a homogenous subgroup for which significant treatment effects occur and for which the interaction terms are no longer significant. The decomposition identified one subgroup for which significant treatment impacts were found. Among those participants with few Unmet ADL needs at baseline, individuals in the treatment group were significantly more impaired in ADL than individuals in the comparative group at the six-month reassessment. With the exception of this one subgroup, there was no significant program impact on participants' level of functioning in ADL at the six-month or 12-month reassessment intervals.

Change over time on the IADL functional measure was not assessed in the New York City project because there was very low inter-rater reliability on the items included in the index (meals, shopping, transportation, medications, and housekeeping).

With respect to mental status, the results were mixed. At the time of the six-month reassessment, both the treatment and comparative groups improved in cognitive functioning. At the time of the 12-month reassessment, the treatment group improved and the comparative group declined in functional status. When baseline differences between the two groups were controlled, there was a significant difference between the two groups on cognitive functioning at the 12-month reassessment interval -- the treatment group had significantly improved in mental status relative to the comparative group.

The results of the analysis of change in functional status at the six-month and 12-month reassessment intervals are summarized in Table 5.2.

Mortality: New York City HCP

Within one year of the initial assessment, a slightly larger proportion of the treatment group (17%) than the comparative group (15%) had died. However, group membership was not a significant factor in explaining death when the effect of initial differences between the groups was removed. Given that the treatment group was significantly more impaired than the comparative group in functional status (ADL and MSQ) at baseline, it is rather remarkable that a larger proportion of the treatment group did not die. The relationship between functional status and death is not apparent; other unmeasured factors apparently contributed to the occurrence of death in these groups.

On Lok CCODA

On Lok's research design is a quasi-experimental pre-test multiple post-test matched pair design which attempts to achieve equivalency between the treatment and comparison groups by matching individuals in the two groups on key variables at the baseline assessment. The project experienced a number of problems identifying and recruiting a group of individuals who could be appropriately matched with the treatment group participants. These recruitment and matching problems had numerous effects on the evaluation process -- e.g., the projected sample size was lowered, and individuals residing in nursing homes at baseline were accepted into the study in order to obtain a comparison group as impaired as the treatment group.

As a result, at the time of the initial or baseline assessment, there were significant differences between the treatment and comparative groups on the following variables: race, location at assessment (nursing home or community), cognitive functioning and emotional functioning. A significantly larger proportion of the treatment group than the comparative group was Chinese, resided in the community rather

Table 5.2
Change in Functional Status Over Time: New York City
 (Analysis of Covariance Using Hierarchical Multiple Regression to
 Control for Baseline Differences in the Treatment and Comparative Groups)

Dependent Variable	Variable Sets Added ^a	Beta	Change in R ²	F-Value of Change
<u>Six-Month Reassessment</u>				
ADL (N = 449)	1) Covariates		.529	99.57***
	ADL - Initial Score	.720***		
	MSQ - Initial Score	.136***		
	Unmet ADL Needs	-.126**		
	Number of Household Residents	.009		
	Race	.002		
	2) Demonstration Effect	.532	.003	2.48
	3) Interactions		.001	2.69*
	ADL x Group	-.234		
	Unmet ADL Needs x Group	.128*		
MSQ (N = 414)	No. Household Residents x Group	-.083		
	MSQ x Group	.055		
	Race x Group	.043		
	1) Covariates		.727	216.83***
	MSQ - Initial Score	.816***		
	ADL - Initial Score	.102***		
	Unmet ADL Needs	-.050		
	Race	.037		
	Number of Household Residents	.004		
	2) Demonstration Effect	.022	.000	.68
<u>12-Month Reassessment</u>				
ADL (N = 371)	1) Covariates		.534	83.56***
	ADL - Initial Score	.667***		
	MSQ - Initial Score	.172***		
	Unmet ADL Needs	-.157***		
	Number of Household Residents	.042		
	Race	.016		
	2) Demonstration Effect	-.094	.010	7.93**
	3) Interactions		.015	2.39*
	ADL x Group	-.421		
	Unmet ADL Needs x Group	.224		
MSQ (N = 356)	No. Household Residents x Group	-.118		
	Race x Group	.076		
	MSQ x Group	.062		
	1) Covariates		.686	153.02***
	MSQ - Initial Score	.775***		
	ADL - Initial Score	.160***		
	Unmet ADL Needs	-.134***		
	Number of Household Residents	-.055		
	Race	.002		
	2) Demonstration Effect	.062*	.003	3.92*

^aVariable definitions and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group

ADL: 0-5 = No Impairment to Severe Impairment

MSQ: 0-10 = No Impairment to Severe Impairment

Unmet ADL Needs: 0-5 = No Unmet Needs to Five Unmet Needs

Number of Household Residents (other than client): 0-5 = None (lowest) to Five (highest)

Race: 0 = White; 1 = Non-White

*p < .05

**p < .01

***p < .001

than in a nursing home, and exhibited problems in cognitive and emotional functioning.

Analysis of covariance was used to control for these baseline differences and determine if the On Lok program had a significant impact on participants' functional status and mortality.

Functional Status: On Lok CCODA

With respect to impairment in ADL, the treatment group improved somewhat at both the six-month and the 12-month reassessment intervals, while the comparative group became slightly more impaired at both reassessment intervals. However, when baseline differences between the two groups were controlled, there was no significant difference in treatment and comparative group participants' ADL scores over time.

A similar pattern of change was found with respect to cognitive functioning. The treatment group improved at both the six-month and the 12-month reassessment intervals, while the comparative group declined somewhat at both reassessment intervals. As with ADL, when baseline differences between the two groups were controlled, there were no significant differences between the treatment and the comparative group scores on cognitive functioning at either the six-month or the 12-month reassessment interval.

The pattern of change was different on the IADL measure -- both the treatment and comparative groups improved in functional status at the six-month and 12-month reassessment intervals. After controlling for baseline differences between the two groups, a significant program impact was found at the 12-month reassessment: relative to the comparative group, the treatment group had improved significantly in IADL functioning.

The results of the analysis of change in functional status over time, after controlling for baseline differences in the treatment and comparative groups, are summarized in Table 5.3.

The lack of consistently statistically significant effects relative to traditional programs for the majority of the functional status measures should not result in dismissal of the possibility of greater effectiveness for community-based long-term care at On Lok. Primarily

Table 5.3
Change in Functional Status Over Time: On Lok
(Analysis of Covariance Using Hierarchical Multiple Regression
to Control for Baseline Differences in the Treatment and Comparative Groups)

Dependent Variable	Variable Sets Added ^a	Beta	Change in R ²	F-Value of Change
<u>Six-Month Reassessment</u>				
ADL (N = 103)	1) Covariates		.331	12.14***
	ADL- Initial Score	.491***		
	Location at Assessment	.221*		
	Race	.051		
	Mental Status	-.017		
IADL (N = 105)	2) Demonstration Effect	-.017	.000	.02
	1) Covariates		.072	1.93
	Race	.257*		
	Location at Assessment	.134		
	Mental Status	.083		
Cognitive Functioning (N = 114)	IADL - Initial Score	.115		
	2) Demonstration Effect	.207	.021	2.24
	1) Covariates		.503	27.53***
	Cognitive Functioning - Initial Score	.653***		
	Location at Assessment	.193*		
	Race	.039		
	Emotional Functioning	.007		
	2) Demonstration Effect	.035	.000	.13
<u>12-Month Reassessment</u>				
ADL (N = 78)	1) Covariates		.213	4.93**
	ADL - Initial Score	.427***		
	Mental Status	.122		
	Race	.071		
	Location at Assessment	.065		
IADL (N = 79)	2) Demonstration Effect	.251	.029	2.79
	1) Covariates		.067	1.32
	Race	.354**		
	Mental Status	.232		
	IADL - Initial Score	.109		
Cognitive Functioning (N = 85)	Location at Assessment	.006		
	2) Demonstration Effect	.514**	.188	10.90**
	1) Covariates		.610	31.24***
	Cognitive Functioning - Initial Score	.733***		
	Race	-.066		
	Emotional Functioning	-.059		
	Location at Assessment	.031		
	2) Demonstration Effect	.052	.001	.25

^aVariable definitions and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group

ADL: 0-5 = No Impairment to Severe Impairment

IADL: 0-3 = No Impairment to Severe Impairment

Location at Assessment: 0 = Community; 1 = SNF

Race: 0 = Non-Chinese; 1 = Chinese

Cognitive Functioning: 0-15 = No Impairment to Severe Impairment

Emotional Functioning: 0-9 = No Impairment to Severe Impairment

Mental Status (Cognitive and Emotional Functioning): 0-24 = No Impairment to Severe Impairment

*p < .05

**p ≤ .01

***p ≤ .001

due to the small sample size, the potential for detecting program impacts is limited. Power analysis revealed that the probability of detecting group effects was unacceptably low on all of the functional measures for which no significant treatment effects were found. Therefore, it is possible that the On Lok program is having an even more consistently positive impact than the findings from this analysis indicate. Limitations of the study may have obscured significant program impacts. All the comparisons with the comparative group do indicate more positive effects for the treatment group.

Mortality: On Lok CCODA

Within one year of the initial assessment, a larger proportion of the comparative group (23%) than the treatment group (15%) died. This difference in mortality between the two groups approaches statistical significance. However, after controlling for baseline differences between the treatment and the comparative groups, there were no significant differences between the two groups with respect to mortality.

San Diego LTCP

The San Diego LTCP used an experimental research design with random assignment, pre-testing and multiple post-tests. The randomization process produced treatment and comparative groups which were comparable on many of the key variables. However, significant group differences were found on five measures: living arrangements (alone versus with others), Katz ADL, MSQ, social resources, and loneliness.

At the time of the baseline assessment, a significantly larger proportion of the treatment group lived alone, was impaired on the Katz ADL, exhibited problems in cognitive functioning, was less socially active and was more lonely than the comparative group. Other than chance, there is no straightforward explanation for these differences. Analysis of covariance was used to control for these baseline differences and determine if the San Diego demonstration project had a significant impact on participants' mortality and functional status over time.

Functional Status: San Diego LTCP

On the ADL measure, both the treatment and comparative groups improved slightly at the six-month and the 12-month reassessment intervals. In contrast, both groups declined in IADL functioning at each of the reassessment intervals. A similar pattern of decline in functional status was found on the MSQ measure, with one exception -- the comparative group showed a slight improvement in mental functioning at the six-month reassessment interval.

When baseline differences between the treatment and comparative groups were controlled, most of the apparent functional change was explained by the baseline differences. There was no significant program impact on the measures of ADL and IADL functional status at either the six-month or the 12-month reassessment intervals, nor was there a significant impact on MSQ at the six-month reassessment interval. However, at 12 months, there was a significant program effect on MSQ; the comparative group was declining in mental functioning more rapidly than the treatment group.

The results of the analysis of change in functional status at the six-month and 12-month reassessment intervals, after controlling for baseline differences in the treatment and comparative groups, are summarized in Table 5.4.

Mortality: San Diego LTCP

Within one year of the initial assessments, a slightly smaller proportion of the treatment group (21%) than the comparative group (23%) had died. In order to accurately assess the program impact on mortality, baseline differences in the treatment and control group were controlled. Based on this analysis, the project had no significantly different impact on mortality than did traditional care.

Project OPEN

Project OPEN's research and evaluation methodology employed an experimental design, combining a randomized control group with a pre-test multiple post-test method. Once it was determined that a referral

Table 5.4

Change in Functional Status Over Time: San Diego
(Analysis of Covariance Using Hierarchical Multiple Regression
to Control for Baseline Differences in the Treatment and Comparative Groups)

Dependent Variable	Variable Sets Added ^a	Beta	Change in R ²	F-Value of Change
<u>Six-Month Reassessment</u>				
ADL (N = 394)	1) Covariates		.66	153.01***
	ADL - Initial Score	.64		
	MSQ - Initial Score	.21		
	Social Resources	-.07		
	Loneliness	.05		
	Living Arrangement	.01		
IADL (N = 394)	2) Demonstration Effect	.03	.00	1.26
	1) Covariates		.52	85.23***
	IADL - Initial Score	.57		
	MSQ - Initial Score	.14		
	Social Resources	-.10		
	Living Arrangement	.05		
MSQ (N = 625)	2) Demonstration Effect	-.04	.00	1.22
	1) Covariates		.64	225.01***
	MSQ - Initial Score	-.76		
	Katz ADL - Initial Score	-.05		
	Living Arrangement	-.04		
	Loneliness	-.04		
	2) Demonstration Effect	.02	.01	.81
	Social Resources	-.01		
<u>12-Month Reassessment</u>				
ADL (N = 331)	1) Covariates		.61	100.51***
	ADL - Initial Score	.66		
	MSQ - Initial Score	.12		
	Social Resources	-.09		
	Living Arrangement	.02		
	Loneliness	.01		
IADL (N = 331)	2) Demonstration Effect	-.04	.00	1.35
	1) Covariates		.47	57.43
	IADL - Initial Score	.58		
	MSQ - Initial Score	.10		
	Social Resources	.05		
	Living Arrangement	.05		
MSQ (N = 526)	2) Demonstration Effect	-.05	.00	1.61
	1) Covariates		.57	139.54***
	MSQ - Initial Score	-.72		
	Social Resources	.05		
	Katz ADL - Initial Score	-.03		
	Living Arrangement	-.02		
	2) Demonstration Effect	.06	.01	4.31*
	Loneliness	.01		

^aVariable definitions and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group

ADL: 0-4 = No Impairment to Severe Impairment

MSQ: 0-10 = No Impairment to Severe Impairment

IADL: 0-5 = No Impairment to Severe Impairment

Social Resources: 0-13 = None to High

Living Arrangement: 0 = Alone; 1 = With Others

Loneliness: 0-6 = No Problem to Major Problem

Katz ADL: 0-5 = No Impairment to Severe Impairment

*p < .05

**p < .01

***p < .001

met the program eligibility criteria, the individual was randomly assigned to either the treatment or the control group.

On balance, this randomization process produced a treatment group and a comparative group which were quite comparable. There were, however, significant group differences on three variables which potentially represented important sources of variation on the outcome measures -- age, location at initial interview, and MSQ.

The data indicated that the treatment group was more diverse in age than the control group, but there was no significant difference in the average age of the treatment and comparative groups. Similarly, a significant difference was found between groups on location at time of the initial interview; however, the distribution was unevenly skewed and over 90% of the participants in each group were residing at home at the time of the initial assessment interview. On the MSQ measure, the comparative group was significantly more impaired, based on the mean scores. However, the average score for both the treatment and comparative groups fell below one, indicating that both groups had, on average, less than one out of ten wrong answers. Based upon this examination of the variables on which the two groups differed at baseline, these differences do not appear to pose a serious threat to the study's basic experimental design.

Because there were no major differences between the treatment and comparative groups at baseline, the participant outcome analysis was less complex than in the other four sites. It was not necessary to use hierarchical regression analysis to control for multiple baseline differences. A basic analysis of covariance model was employed to assess change in functional status over time.

Functional Status: Project OPEN

With one exception, the changes in functional status scores were remarkably similar for the treatment and comparative groups. Both groups declined on each of the functional status measures (ADL, IADL and MSQ) at both the six-month and 12-month reassessment intervals. The exception to this overall pattern of decline was found in the the treatment group's MSQ score at the six-month reassessment -- there was no

change in the mean score between the baseline assessment and the six-month reassessment.

Table 5.5 summarizes the results of the analysis of covariance in which differences in the treatment and comparative groups on the three functional status measures of ADL, IADL and MSQ at the six-month and 12-month time period are assessed, after controlling for the functional status of participants at the time of their initial assessment. Controlling for the level of functioning at baseline, a significant treatment effect was noted only on the MSQ measure at the time of the six-month reassessment. No significant treatment effect was found on measures of ADL or IADL functioning of either the six-month or the 12-month reassessment. Overall, involvement in Project OPEN services did not have a measurably different impact upon the functional ability of the treatment group than did traditional services.

Mortality: Project OPEN

The project was also found to have had no significantly different treatment impact on mortality rates than did traditional services. Approximately equal percentages of both the treatment and comparative group members died during the course of the demonstration period. Overall, slightly less than 12% of the treatment group and 18% of the comparative group died while an active participant in Project OPEN. Adjusting for the length of time participants were in the program, the project calculated an overall death rate per client year of 9% for the treatment group and 7% for the comparative group; however, this rate showed wide fluctuation across the three study years. Over the three year study period, the treatment group's annual mortality rate increased from 5% in 1980 to 12% in 1982, while the comparative group's annual mortality rate declined from 16% in 1980 to 4% in 1982. According to the project's research staff, there was no apparent explanation for this pattern. Independent analysis conducted by BPA on this data employing D.R. Cox's life-table regression model for censored data found no significant treatment impact on mortality.

Table 5.5
 Change in Functional Status Over Time: Project OPEN
 (Analysis of Covariance Controlling for Baseline Differences
 in the Treatment and Comparative Groups)

Dependent Variable	Variable Sets Added ^a	T-Value	R ² for the Model	F-Value of the Model	F-Value of the Demonstration Effect
<u>Six-Month Reassessment</u>					
ADL (N = 286)	1) Covariate				
	ADL - Initial Score	17.88***			
	2) Demonstration Effect	-.35	.531	160.30***	.12
IADL (N = 270)	1) Covariate				
	IADL - Initial Score	23.49			
	2) Demonstration Effect	.14	.673	276.44***	.02
MSQ (N = 287)	1) Covariate				
	MSQ - Initial Score	13.50			
	2) Demonstration Effect	2.34*	.410	98.76***	5.46*
<u>12-Month Reassessment</u>					
ADL (N = 243)	1) Covariate				
	ADL - Initial Score	12.54***			
	2) Demonstration Effect	-1.46	.400	80.01***	2.12
IADL (N = 226)	1) Covariate				
	IADL - Initial Score	15.47***			
	2) Demonstration Effect	1.42	.522	121.81***	2.02
MSQ (N = 244)	1) Covariate				
	MSQ - Initial Score	14.43***			
	2) Demonstration Effect	.99	.471	107.46***	.98

^aVariable definitions and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group

ADL: 0-5 = No Impairment to Severe Impairment

IADL: 0-5 = No Impairment to Severe Impairment

MSQ: 0-10 = No Impairment to Severe Impairment

*p < .05

***p < .001

Other Measures of Participant Outcomes

It has been suggested that even if community-based services could be justified based on significant reductions in clients' functional status, or a reduction in service utilization and costs, their impact on clients' well-being and life satisfaction may present compelling reasons for implementing such programs on a broad scale.

Some of the HCFA demonstration projects assessed participant outcomes in areas such as life satisfaction, happiness, morale and social resources. However, in most of the projects these measures were found to be either unreliable or unavailable. Unfortunately, measures of participant outcomes related to clients' well-being could be analyzed in only two of the projects -- San Diego LTCP and Project OPEN.

In the San Diego project, two composite measures were used: client morale, and social resources and activities. Client morale was measured by the Philadelphia Geriatric Center Morale Scale, a 17-item scale with items grouped into three categories: agitation, attitude toward own aging, and lonely dissatisfaction. Social participation was measured by the Social Resources and Activity Scale developed in the Duke University Study of Aging and Human Development. The 13-point scale measures the number, frequency and satisfaction with social resources and activities. In Project OPEN, the research component of the project developed a Social Network Scale which was found to have high reliability. The 14-item scale assesses the extent to which participants interacted with family members and friends, and satisfaction with these relationships. In the BPA evaluation, analysis of covariance controlling for baseline differences between the treatment and comparative groups was used to assess program impacts on these outcome measures related to participants' well-being.

In the San Diego project, a significant program impact was found at the six-month reassessment interval on two of the measures: lonely dissatisfaction and attitude toward own aging. Relative to the comparative group, the treatment group was less dissatisfied with loneliness and had a better attitude toward their own aging. In addition, while there were no significant program impacts on the measures of agitation and social resources at the time of the six-month reassessment, the

treatment group did improve relative to the comparative group. At the time of the 12-month reassessment, there were no longer any significant program impacts on the four measures (social resources and activities, lonely dissatisfaction, attitude toward aging, and agitation), but the treatment group did show more improvement than the comparative group on three of the four measures.

The treatment impact found in the Project OPEN findings was even more encouraging. On the social network scale at the time of both the six-month and the 12-month reassessment intervals, the treatment group showed significant improvement relative to the comparative group.

When strict tests of statistical significance are applied, the findings related to participant outcomes on measures of well-being are inconclusive. On the other hand, there is an overall pattern for the treatment group to experience positive outcomes in these measures. There is a clear need to develop valid and reliable measures to assess well-being and life satisfaction among the frail aged. These types of measures are difficult to measure successfully among any population, but among the elderly in need of long-term care services, these measures become even more important when concrete measures such as improvement in functional status, may represent unrealistic goals for a disabled older population.

Summary

Figure 5.3 summarizes the findings of the project-by-project demonstration impacts. Client outcomes relative to the comparative group were assessed at six-month and 12-month reassessment intervals in four primary categories: Activities of Daily Living (ADL); Instrumental Activities of Daily Living (IADL), mental status, and mortality.

As the information in Figure 5.3 shows, the results of the analysis of project-by-project demonstration impacts were mixed. Although there were few statistically significant program impacts at the .05 level of significance, there was an overall pattern for the treatment groups to have more favorable participant outcomes than the comparative groups.

Relative to the comparative group, in the majority of the projects, the treatment group had more favorable outcomes on the following

Figure 5.3
Relative Impact of the Demonstration Projects
on Participants' Functional Status and Mortality^a
After Controlling for Baseline Differences
in the Treatment and Comparative Groups

Project	Direction of Program Impact						
	Functional Status						Mortality
	ADL		IADL		MSQ		
	6-mo.	12-mo.	6-mo.	12.mo.	6-mo.	12-mo.	
South Carolina	+	-	-	-	+	+	+
New York City	+	-	N/A ^b	N/A ^b	-	+	-
On Lok	+	+	+	+	+	+	+
San Diego	+	-	-	-	+	+	+
Project OPEN	-	-	+	+	+	+	+

^a "+" indicates the demonstration project had a more positive impact than the traditional long-term care system (i.e., the treatment group improved in functional status and experienced lower mortality than the comparative group). "-" indicates the demonstration project had a less positive impact than the traditional long-term care system (i.e., the treatment group decreased in functional status or experienced higher mortality than the comparative group).

^b Functional status in IADL was not assessed in the New York City project due to unacceptably low inter-rater reliability on items in the index.

* $p < .05$

** $p < .01$

measures: (1) ADL at the six-month reassessment, (2) MSQ at both the six-month and 12-month reassessment, and (3) mortality during the 12-month study period.

Statistically significant program impacts related to change in functional status were found in the following projects: On Lok participants showed significant improvement in IADL at the 12-month reassessment; Project OPEN participants showed significant improvement in mental status at the six-month reassessment; and San Diego and New York City participants showed significantly less decline in mental status than their respective comparative groups at the 12-month reassessment.

In sum, there were very few statistically significant program impacts related to participants' functional status or mortality, but the overall patterns of change was more favorable for the treatment groups than the comparative groups.

CROSS-SITE COMPARISONS

The lack of significant findings in the project-by-project analysis may be partially attributed to several factors, such as the large differences between the baseline characteristics of the treatment and comparative groups, the relatively small sample sizes in some projects, and the short duration of the study period.

While overall there were few significant program impacts, it is important to examine the extent to which the demonstration programs were successful in maintaining the treatment group level of functioning. Moving from an experimental model to a purely descriptive approach, it is possible to look for overall patterns and trends among the treatment groups, i.e., the clients who were served by the various demonstration projects. Change over time in functional status for the treatment groups will be assessed using an individual transition approach.

Individual Transitions

One of the primary goals of each of the demonstration projects was to maintain and, when feasible, improve the functional status of clients

served by the program. The analysis which follows permits an assessment of each project's success in achieving this goal.

The individual transitions approach is based on change in the functional status scores (ADL, IADL, and MSQ) for each client in each of the demonstration projects. The study samples examined were: (1) clients for whom a six-month reassessment was completed and (2) clients for whom a 12-month reassessment was completed. For each time interval, change on each of the three functional status scores was recorded for each client. Three categories of change or transition were defined:

- improved -- a client improved in functional status relative to his/her baseline score;
- maintained -- a client's functional status score did not change relative to his/her baseline score; and
- declined -- a client declined in functional status relative to his/her baseline score.

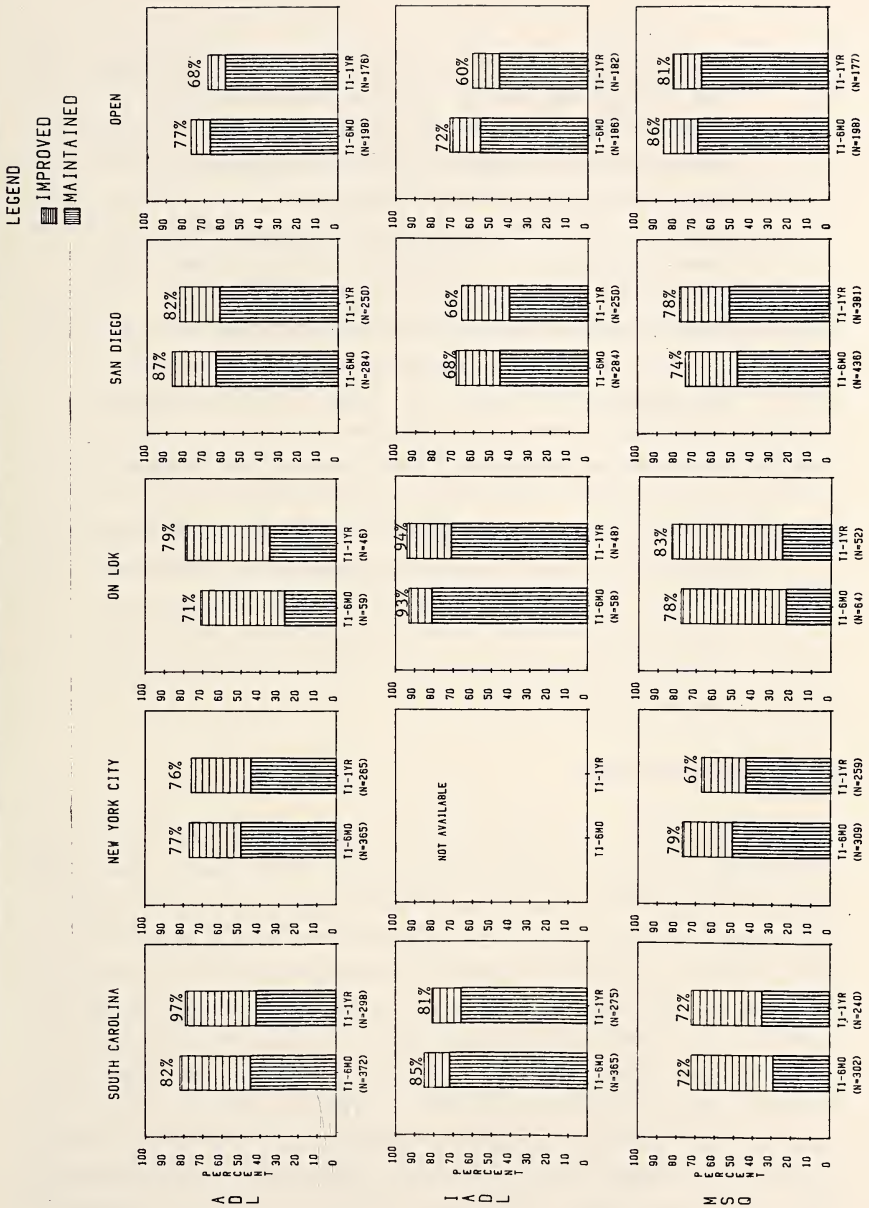
When interpreting these data, the reader should keep in mind that this analysis assesses each client's change in functional status, regardless of his/her level of impairment at baseline. For example, both a severely impaired and a mildly impaired client who improved in ADL between the time of the the baseline assessment and the six-month reassessment, would be included in the improved category.

Figure 5.4 graphically presents the results of the individual transitions or change over time in ADL, IADL and MSQ, for clients in each of the demonstration projects. The data show the proportion of clients who maintained or improved their functional status over time. Based on these data, several interesting observations can be made:

- (1) The overall proportion of clients in each of the projects who maintained or improved their functional status is quite high on all three functional measures -- ADL from 68% to 87%, IADL from 59% to 94%, and MSQ from 67% to 86%.
- (2) The proportion of clients who maintained or improved their functional status does not vary substantially among the three functional status indices nor across the five demonstration projects.

Figure 5.4

Proportion of the Treatment Group Who Improved or Maintained their Functional Status Over Time



- (3) In each of the projects, there was an overall pattern for the proportion of clients who maintained or improved their functional status to remain the same at each of the reassessment intervals (baseline to six months and baseline to 12 months).
- (4) In most of the projects, clients were more likely to show "improvement" in cognitive functioning (MSQ) than in physical functioning (ADL and IADL).
- (5) With respect to physical functioning (ADL and IADL), in most of the projects, a large proportion of the clients "maintained" their functional status, while a somewhat smaller proportion "improved" their functional status.
- (6) The three projects whose clients were the most impaired in activities of daily living at baseline (South Carolina CLTCP, New York City HCP, and On Lok CCODA), were more likely to show improvement in functional status, while projects with less impaired clients at baseline (San Diego LTCP and Project OPEN) were more likely to maintain (rather than improve) the functional status of their clients.

SUMMARY AND CONCLUSION

To summarize, the results of the analysis of project-by-project demonstration impacts on participant outcomes were mixed. There were very few statistically significant program impacts at the .05 significance level related to participants' functional status and mortality. This indicates that while community-based care was not consistently worse than traditional care, it also not consistently superior either, counter to what many advocates had hoped. Projects were successful in having positive effect on cognitive functioning (albeit not consistently across clients, e.g., statistically significant impact). The On Lok project, unlike the other projects, did appear to have positive findings on most functioning measures and mortality, with results approaching statistical significance, and clearly indicating substantive importance.

This project would appear to be the project with the most positive impact, even controlling for client characteristics at intake. The analysis here does use, however, the larger On Lok comparative group, rather than the smaller and more truly comparable group of controls who were residing in the community at intake; the latter control group is used in the subsequent analysis of service utilization and cost.

More encouragingly, across all projects, an assessment of individual transition or change over time suggests that each project was successful in maintaining or improving the functional status of more than one-half of the client population.

Given the level of disability of the aged served in many of these programs, it may be unreasonable to expect statistically and substantively "significant" improvement in clients' health and functional status. A more realistic goal for this study population may be one of maintenance and prevention of decline. However, the broad success of On Lok, even with its more impaired treatment sample, is encouraging.

VI. SERVICE UTILIZATION AND PUBLIC COSTS

OVERVIEW

This chapter provides information on the patterns of service use and public reimbursement for each of the five demonstrations featured in the cost-effectiveness component of the evaluation (San Diego LTCP, New York City HCP, South Carolina CLTCP, On Lok CCODA and Project OPEN). First, the sources of data and analytic methods are described, including development of variables for Medicare utilization and reimbursement, Medicaid utilization and reimbursement, waived service use and case management production cost. Results are then presented for each project separately. Case management costs and patterns of waived service utilization and reimbursement for the five projects are presented next. Then, patterns of traditional Medicare and Medicaid utilization and reimbursement are presented, and the effectiveness of the demonstrations in controlling use of these existing services is assessed. A final section compares findings across projects and presents standardized estimates of Medicare and, where relevant, Medicaid payments across projects. The implications of these findings about impacts on public payments, specifically public reimbursements for community-oriented long-term care, are discussed, with special attention given to project differences in intervention approach, waived service packages, and target populations.¹

INTRODUCTION

Since the advent of Title XVIII and Title XIX, there has been a rapid and sustained growth in health care expenditures in the United States. Between 1965 and 1981, for example, all health care expenditures have grown at an average annual rate of 12.8%, with the public sector contribution nearly doubling during the period to over 40% (Gibson and Waldo, 1982). While this growth in both spending and gov-

ernment contribution may be attributed to many factors, the steady growth in the size of the aged population and its increasing use of both acute and institutional long-term care under Medicare and Medicaid have been cited among the major causes. It has been proposed that expanding the availability of community-oriented health and social services may be one viable approach to containing growth in governmental expenditures for health care (GAO, 1982). In addition, attention has increasingly focused in recent years on reforming the reimbursement system as another method to contain growth of these entitlement programs.

A major goal of the 1115 Medicaid and 222 Medicare demonstrations included in the national evaluation was to demonstrate that case management, coordinated delivery of expanded community-oriented long-term care, and several reimbursement-oriented cost control mechanisms, could result in containment of the public costs of health care for the aged and other disabled adults. This chapter addresses the success of selected demonstration projects in achieving cost containment from the perspectives of Medicare- and Medicaid-reimbursed service use. Analyses of individual demonstration project impacts can be found in Appendix A.

Prior Studies

Building on evidence that some institutional long-term care was inappropriate or avoidable, numerous demonstration and research efforts have examined the potential of expanded home and community-based services to: (1) delay the use of nursing home care by avoiding unjustified placements and reducing the rate in decline of potential patients' functioning; or (2) substitute for nursing home care by providing alternative services. Most studies sought to achieve these goals without increasing the use of other publicly-supported health and social services, particularly acute care. Several efforts focused explicitly on control of health and social service use. It was anticipated that these efforts would result in generally lower public costs for long-term care, since the incremental costs associated with service coordination and expanded services would not offset cost savings associated with reduced use of expensive institutional services. These studies are reviewed in BPA's Revisions to the Research Design, Part I (1981) and

the Preliminary Report on Work in Progress (1982) of the national evaluation; Gurland, et. al., (1981); the GAO (1982); and elsewhere. Most reviews conclude that results to date are inconclusive at best. Prior studies have focused their findings in three main areas: control of nursing home utilization, control of acute care utilization, and public sector health care costs. Results from major studies and demonstration efforts to date (including early findings from community-based long-term care demonstrations) are discussed below for each of these areas.

Control of nursing home utilization has been demonstrated in most studies, but findings generally have been clouded by methodological problems and/or low levels of nursing home use by all study cohorts. For example, the Georgia AHS study (Georgia Department of Medical Assistance, 1982) found reductions in nursing home use were not stable over time, though an effect was observed during the first six months after assessment. Weissert et al. (1979), found reduced nursing home use for some adult day health care users, but not for users of homemaker or combined day care and homemaker services.² Use of nursing homes was particularly low in both these studies. The CCO-Milwaukee (Seidl, 1980), Triage (Quinn and Hicks, 1979), MSSP (Miller, et al., 1984), ACCESS I (Macro Systems, 1980) and preliminary findings from LTHHCP (Abt Associates, Inc., 1984) studies have each also noted reductions in nursing home use. However, the Wisconsin study is flawed because of sample loss in Medicaid utilization data, and the Triage and ACCESS I studies involved comparisons in non-comparable areas; also, in the ACCESS I study, only aggregate level comparisons were made (Macro Systems, 1980). None of these studies are thus definitive, though the MSSP and LTHHCP findings are encouraging and could prove more definitive when the studies are complete. The findings available from studies regarding control of acute care utilization are less positive. Weissert, et al., found no impacts for any study group on acute care use. Similarly, the Georgia AHS, CCO-Milwaukee, LTHHCP and other studies found no impact on acute care use, while the Triage, ACCESS I and Cleveland/GAO studies found higher use of acute care facilities.

Many of the methodological concerns noted above cloud these findings as well.

Results for savings in total costs are similarly and more consistently negative. The Georgia AHS, CCO-Milwaukee, Weissert, et al., LTHHCP, MSSP and Triage studies all found higher total public costs associated with the experimental programs. In all cases, whatever costs savings that may have been associated with reductions in either nursing home or hospital use were offset by the costs of the expanded services. While the ACCESS I project appeared to be associated with lower aggregate growth in Medicaid costs, these results are confounded by the nature of the aggregate comparisons and incomplete attention given to costs associated with the demonstration's service expansion and case management.

In summary, there is support for the contention that coordinated community-oriented long-term care programs can reduce nursing home use, but it appears that this result has been either at the cost of increased hospitalizations or with no impact on acute care use. In general, previous studies have found that the expanded service systems are more expensive than the existing system of care.

METHODS

The following sections present an overview of the methods used in assessing the performance of the five coordinated community-oriented long-term care demonstrations. First, the development of the utilization and reimbursement data sets for each project are described, and the strengths and limitations of the approach are highlighted. Next, the development of data sets reflecting the various kinds of public payments are described, including Medicare, Medicaid, waived service, and case management components. The discussions of the last two components include analyses of strategies at the level of the individual project and then finally develop the standard unit for measurement of project impact used in the cross-site comparison. The research methodology is discussed in greater depth in Appendix C.

Development of the Utilization and Reimbursement Data Sets

Table 6.1 summarizes the data sets, time frames, and sample sizes available for the analysis of publicly reimbursed service utilization and costs. As noted, Medicare utilization and reimbursement data were available and analyzed for all five projects, while Medicaid data were available and analyzed for the New York City HCP and South Carolina CLTCP only. Medicare waived service use and reimbursement data were available for all the Medicare 222 projects. Medicare data were obtained from the Office of Direct Reimbursement (ODR) for the San Diego LTCP, Project OPEN and New York City HCP, while On Lok provided the data directly to BPA. Medicare waived service use was obtained from the South Carolina project. Case management production cost data were available for all five projects, based on accounting studies performed by BPA in conjunction with the demonstrations. Before describing each of these data sets, some general remarks about the organization of the utilization data are provided.

All utilization files (Medicare Part A and Part B home health, Medicaid, Medicare waiver, and Medicaid waiver) were organized by client months after enrollment. Because patterns of differential rates and/or reasons for attrition were noted in all projects, data were considered for a period of 12 months after project enrollment or until death or until the person became ineligible for the project (e.g., change in residence). This approach resulted in following some cases after client-initiated discharge or project-initiated discharge (e.g., at permanent nursing home placement, improved functioning, declined functioning). Table 6.1 shows the discharge codes used in definition of a termination less than 12 months after enrollment for each project. Table 6.1 also indicates the sample size and proportion of eligibles for Medicaid or Medicare included in each project analysis. It is important to note that data were not available for all cases. Since Medicare beneficiary identifiers were checked against HCFA records through the Health Information Print Out (HIPO) process and then rechecked against project records, cases with no service utilization who were correctly identified by the projects are accurately included in the data sets. Nonetheless, it is possible that some of the cases for whom data were

Table 6.1
 Medicare and Medicaid Utilization and Reimbursement Data Availability:
 Sample Sizes, Time Frames, and Discharge Codes

Data Availability	Project OPEN	South Carolina		San Diego	New York City	On Lok	
		6 mos.	12 mos.			Comp Study	Pool
Medicare							
Sample Size	266	811	618	638	619	139	516
Proportion of Eligibles	79%	84%	70%	77%	88%	100%	100%
Project Time Frame	10/79 - 6/83	7/80 - present		1/81 - 2/83	10/80 - 6/83	2/78 - 6/82	
Data Set Time Frame	10/79 - 6/83	7/80 - 11/82		1/81 - 1/83	10/80 - 2/83	2/79 - 6/82	
Available Months of Data	12	6	12	12	8	12	12
Source	HCFA-BBHRS ^a	HCFA-BBHRS ^a		HCFA-BBHRS ^a	HCFA-BBHRS ^a	Project Data ^c	
Medicaid							
Sample Size	^b NA	1032	821	^b NA	44	NA ^b	
Proportion of Eligibles	NA	95%	95%	NA	64%	NA	
Available Months of Data	NA	6	12	NA	11	NA	
Source	NA	State of SC thru project			New York State	See Footnote ^c	
Codes: Stop at Discharge	Died, Moved from Area	Died, Ineligible, Moved from Area		Died, Moved from Area	Died, Moved from Area	Died, Disenrolled	
Codes: Follow after Discharge	Withdraw	Withdraw, No Long-Term Care Need		Withdraw or SNF	SNF, Withdraw, Needs Declined or Excessive		

^aBeneficiary Bill History Retrieval System

^bNA = Data not available

^cProject data for On Lok based on diaries and provider records; does not permit disaggregation of Medicare, Medicaid, and other public programs.

not available were excluded from the analyses because they made no use of Medicare services during the study period and this information could not be verified by the project. However, sample loss was not severe in most cases. For New York, California, and South Carolina Medicaid data sets, detailed processes for checking patient identifiers were used, and are described in the Appendix A analyses. The relatively low percentage of New York City cases for whom Medicaid data were obtained suggests that there may have been inaccuracies in this process.

While total utilization and reimbursements associated with the utilization are considered in the individual project analyses, for the cross-site analysis attention is focused only on average monthly utilization and reimbursements. The average monthly values are used since they are the least sensitive to differences in the time periods for which each case was followed. No adjustments for differential mortality rates were made, since as shown in Chapter 5, differential mortality was not observed in any of the five projects included in this analysis. Average monthly utilization (or reimbursements) were calculated as in

$$AU_j = \frac{\sum U_{j1} \dots U_{jn}}{n}$$

where:

AU_j = average monthly utilization of service j ; and $U_{j1} \dots U_{jn}$ = the total monthly utilization of service j in months 1 to n with $n \leq 12$, defined individually for each case, based on enrollment date and last date of utilization up to 12 months later.

In some cases, utilization and reimbursement data were not complete for a full 12-month period after enrollment for all cases in a project. In general, cut-off dates were defined by examination of the average number of bills in each month on a case-by-case basis. If a case showed a reduction greater than 10% in average monthly bills compared to the month with the largest number of bills for that case, it was treated as the cut-off date. In fact, in all cases where it was necessary to censor the period of observation, the cut-off month represented a drop of greater than 40% in the number of bills for that case compared with the prior month, suggesting that the cut-off month was in fact beyond the period where full data were available.

Traditional Medicare Part A and Part B Home Health

Data on use of acute care hospitals, skilled nursing facilities and certified home health agencies were obtained directly from HCFA's Division of Beneficiary and Provider Systems (DBPS), Master Records Branch, through the Bill History Retrieval System. These summary bill records reflect all bills processed for HCFA by fiscal intermediaries, and Part B home health use processed through carriers, including adjustments to bills. However, they do not reflect any changes in reimbursement to facilities associated with prospective interim payment or related methods that may have occurred. The degree of error associated with such adjustments is difficult to gauge at the client level, and aggregate adjustments are known to vary considerably by intermediary and region. All bill adjustments were made following procedures detailed by DBPS.

Data from the Bill History Retrieval System includes both charges and reimbursements in all service categories, as well as lengths of stay in nursing homes and hospitals and units of home health care. (Charges were not analyzed as part of this national evaluation.) Since some bills covered periods that began prior to project enrollment for a case or ended after the study period for that case, lengths of stay, home health units and reimbursements were prorated to attribute only the utilization and reimbursement that occurred during each case's study period. Since the prorating could be based only on the proportion of the utilization that occurred during the case's study period, it did not permit adjustment for variations in intensity of services during the stay. The detailed algorithms for prorating bills that spanned the initiation or completion of a case's study period are available upon request.

Medicare Part A and Part B (home health only) data were analyzed in terms of the following variables, all constructed from the bill histories:

- average monthly acute care days;
- average monthly acute care admissions;
- average monthly acute care reimbursements;
- average monthly SNF days;

- average monthly SNF admissions;
- average monthly SNF reimbursements;
- average monthly Part A and Part B home health units of service;
- average monthly Part A and Part B home health reimbursements; and
- total average monthly reimbursements.

Part A and Part B home health utilization and reimbursements were combined because most study periods occurred after the changes in home health coverage under Medicare that resulted in most home health use being billed under Part A.

Traditional Medicaid

Data on the traditional Medicaid services were obtained for South Carolina, New York and California. In New York and South Carolina, data were obtained by the project with some assistance from BPA and from the state Medicaid bill processing authority. Available data varied by state, as a reflection of covered services, but in general included hospital, nursing home and other service use and reimbursements. The data available from each state are described in the Appendix A analyses. In New York State, the home attendant/personal care aide programs can be administered through local government, which in fact was the case for New York City. In this instance, non-professional home health use and reimbursement data (on paper records) were obtained through the New York City Department of Human Resources. Paper records only were available on other Medicaid utilization in New York City, while computerized data were available from South Carolina. As noted earlier, Medicaid utilization data appear relatively complete in South Carolina, although there are concerns about its completeness in New York. The Medicaid data for each project are described in the context of the analyses below.

Waivered Service Use and Reimbursements

For Project OPEN, San Diego LTCP and New York HCP, data on use of waived services under Medicare were obtained through ODR. The data

consisted of individual bills, usually covering a month of service of a given type. Bills were organized into client files by month, and averaged monthly use of each service was computed as for traditional Medicare services using individualized study time frames for each case. The bills were adjusted for any billing errors and, in the case of San Diego where a prospective interim payment process was used, bills reflected any adjustments to payments resulting from the process. ODR data covered essentially all cases, and there were less than 10% of the participants with no use of the waived services. In New York City HCP and Project OPEN, a negotiated reimbursement rate was used. Unlike these three projects, On Lok received a flat rate per client per month from ODR, but the project internally developed detailed records of service use. By definition, all On Lok treatment clients used waived services. South Carolina CLTCP arranged for waived Medicaid services to be billed through the same intermediary as all other Medicaid services; thus, information on waived service use was provided to BPA with other Medicaid utilization data. All waived services data were analyzed concurrently with traditional service use data in South Carolina. However, the South Carolina project is unique in that less than 20% of the cases ever used waived services other than case management and the extended eligibility for traditional Medicaid services offered to Medical Assistance Only participants.

Case Management Costs

Attachment 1 presents the methodology and results of a detailed analysis of the costs of case management at each of the five demonstrations featured in the cost-effectiveness analysis. Briefly, case management was consistently defined in all programs as "an administrative service that directs client movement through a series of phased involvements with the long-term care system". The particular phases of involvement, the nature of each project's activities in relation to the clients, and the personnel and indirect costs associated with each project were defined for each project. BPA conducted a detailed accounting study of the internal cost data of each project under the direction of a Certified Public Accountant, and a number of issues in the

treatment of disparate accounting systems were resolved in cooperation with the projects. Through the use of time-tracking methods, project staff time was distributed to case management and non-case management activities. Total costs for case management, including personnel, administrative, and indirect costs, were developed by: (1) taking the percentage of total staff time attributable to case management as a percentage of total staff time, and (2) then attributing indirect costs following that percentage. Time periods within which to conduct the study were negotiated with each project. The goal in selecting time frames was to achieve a mature, operational phase of each project that corresponded to the study period for the majority of clients. Total case management costs during a time period were divided by the number of client months during that time frame, to arrive at an estimated per client per month cost of case management.

Analytic Approaches: Individual Project Analysis

The approach used in the analyses of utilization and reimbursement for individual projects followed the same model used in the analyses of functional change and mortality. The model is based on analysis of covariance using hierarchical multiple regression (see Chapter 5 and Appendix C).

The effect of the treatment program on utilization and reimbursements was observed through the magnitude, direction and sign of a dummy variable representing treatment versus comparative group participation in a regression equation that also included variables reflecting all intake case mix differences between the treatment and comparative groups. The homogeneity of covariate effect across treatment groups was examined in all cases through exploration of a fully saturated model including terms reflecting the interaction between treatment versus comparative group status and each of the covariates (Cohen and Cohen, 1983). This was done in order to be assured that the treatment effect was consistent for various subgroups. Where heterogeneity of covariate effect was noted, the study groups were decomposed based on the interacting covariates and the analyses were performed again with the more homogeneous subpopulations. That is, where major differences were found

in the earlier regressions for the relationship between service utilization costs and program participation for different kinds of clients (as detected by dummy variables for different client characteristics), the analysis was redone separately for each kind of client, grouping clients by those characteristics. While this approach was necessary in order to maintain the assumptions of the analysis of covariance model, it had the added bonus, in some cases, of allowing the identification of subpopulations for whom the demonstration had differential effects. Additional variables reflecting any biasing impacts of differential rates and reasons for attrition on treatment versus comparative group comparability also could have been entered as additional covariates if necessary; the detailed analyses presented in Appendix A demonstrated that this was not required.

While the analysis of covariance approach was deemed the most efficient way to control for baseline case-mix differences that might bias comparisons between treatment and comparative groups, it is only required in the analysis of individual project findings to the extent that factors associated with case-mix differences are also associated with patterns of utilization and public reimbursement. As will be seen below, this was rarely the case. To the contrary, measures of demographic characteristics, functional status, and service needs appear to have, in most cases, relatively little predictive value with regard to service utilization or public payments. Thus, in most of the individual project analyses presented below, direct comparisons of means using t-statistics are employed, with analysis of covariance findings presented only where they substantively change the estimated mean or average levels of service use or payments, or the magnitude and direction of the program impacts.

Cross-Site Comparisons: The Break-Even Approach to Standardization

A number of factors associated with the results of prior research in community-oriented long-term care, as well as some special concerns related to the validity of cross-site comparisons, led BPA to the development of a breakeven model as an approach to standardization of program impacts.³ As shown earlier, prior research had found that certain

programs were in fact associated with some meaningful reductions in nursing home use. It is possible, although it has not been adequately studied, that the programs may also be associated with lower use of other publicly-supported services. While encouraging, these results were counterbalanced by the finding that the incremental costs of the demonstrations outweighed any savings that may have been associated with control of nursing homes or acute care utilization.

It appears important, then, considering the increasing demand for community-oriented long-term care services, to identify to what extent any of the existing models can produce utilization control, under Medicaid and Medicare, and do so without incremental costs that exceed whatever reimbursement savings derive from that control. To accomplish this, a method for considering all of these components of cost was required, one that would permit a standard unit of measurement for program impacts. This is important because the demonstrations included in the national evaluation occurred in a heterogeneous group of host communities and at slightly different time periods. As a result, simple cross-site comparisons could be confounded by regional and temporal differences in health care pricing and practice patterns. Also, in most cases, the components of costs are derived from multiple data sources and methods, and, in some cases, estimated costs are fixed amounts (e.g., case management costs at most projects).

A breakeven model was adopted as a mechanism for addressing these concerns. Specification of this standard unit of measurement for program impacts follows. First, the utilization control impacts of each project included in the cost-effectiveness studies were expressed as the difference between the experimental and comparison groups in mean average monthly total costs for traditional services. This difference in dollar costs was corrected both for regional pricing and practice patterns and converted into an estimate of days of care saved by dividing by a constant equaling the average public reimbursement per day for the most heavily used services (e.g., acute care hospital days under Medicare or nursing home days under Medicaid). That is, for the Medicare breakeven model,

$$I_T = \frac{M_C - M_e}{A}$$

where:

I_T = the mean utilization control impact of the project on traditional services or, stated differently, the extent to which the project was able to control utilization of traditional services, expressed in days of hospital care based on an independently determined estimate of the average daily Medicare reimbursement rate for these days in the region and time frame of the demonstration;

M_C = mean averaged monthly total reimbursements for all traditional Medicare services for the control or comparison group;

M_e = mean averaged monthly total reimbursements for all traditional Medicare services for the experimental group; and

A = the average daily Medicare reimbursement for acute care days within the region and time frame of the demonstrations.

To specify the incremental costs of the demonstration -- the next component of the breakeven model -- the costs for case management services and all other waived services were comparably expressed in terms of days of hospital care adjusted for temporal and regional pricing and practice patterns. For Medicare, for example:

$$I_D = \frac{CM + M_w}{A}$$

where:

I_D = the incremental costs of the demonstration, expressed as days of hospital care reimbursed by Medicare based on an independently determined estimate of the average daily reimbursement for these services;

CM = the costs of case management and service coordination of each demonstration project;

M_w = mean averaged monthly reimbursement for all waived services; and A is as above.

A breakeven model for Medicaid would be identical to the above, except that M_e , M_C and M_w would refer to mean averaged monthly reimbursements for all traditional and waived Medicaid services and A

would refer to independently determined averaged daily reimbursements for nursing home care.

With the utilization control impact of the demonstration expressed as above and the costs of the waived services and case management comparably expressed in days of nursing home or hospital use, the cost containment performance of the demonstration is easily tested. The null hypothesis is that utilization control of traditional services will have been inadequate to offset the incremental costs of the demonstration project's case management and expanded waived services, while the alternate, breakeven hypothesis is that utilization control of traditional services will have been sufficient to offset any incremental costs of the demonstrations.

$$H_0 : I_T < I_D$$

$$H_1 : I_T \geq I_D$$

Further, $I_T - I_D$ gives an approximate sense of the number of additional days of nursing home or hospital use that would have had to be reduced in order for the project to break even financially in terms of Medicare or Medicaid savings, if H_0 is true. It should be noted, however, that most projects, in actual practice, would need to change utilization patterns in a host of ways, including reducing nursing home, hospital, home health, ambulatory care, and waived service, in order to break even.

Methods for testing these hypotheses involve simple t-statistics. Appendix C shows the derivation of variance estimates for I_T and I_D required for testing the hypotheses. Results of the breakeven analyses for the five projects are presented in the "Cross-Site Analysis" section of this chapter, below.

PROJECT-BY-PROJECT ANALYSIS

SOUTH CAROLINA COMMUNITY LONG-TERM CARE PROJECT

The South Carolina Community Long-Term Care Project provided nursing home preadmission screening, case management and expanded

community-based long-term care services through Medicaid 1115 waivers. More recently, the project also obtained Medicare 222 waivers, but this occurred after the close of the demonstration study period considered in this evaluation. The project sought, through the combined services, to reduce the use of nursing homes by diverting potential users at the time of admission. The project also extended eligibility for Medicaid services in the community to Medical Assistance Only (MAO) eligibles, who normally are covered by Medicaid only in nursing homes. This action was taken to reduce any institutional bias in existing eligibility rules. It was expected that the waived services would have little impact on use of traditionally covered Medicare services except perhaps through reduced use of nursing homes and/or more timely discharge from hospitals.

For the analysis of traditional and waived Medicaid services, data were available for at least six months for 1,031 individuals, or 94% of the original sample. Data also were available for a full 12 months for 821 individuals, or 75% of the original sample. Findings are presented for both time frames. For the analysis of Medicare Part A and Part B home health services, data were available for 79% and 71% of the individuals included in the six- and 12-month Medicaid analyses, respectively. However, since about 10% of both samples were under age 65 and non-SSI eligible and therefore not included in the study, this represents at most a 15% and 10% sample loss for the Medicare analysis six- and 12-month samples.

Demonstration Services

Table 6.2 presents results of the analysis of utilization and reimbursement for the waived services, case management and co-payments in the South Carolina demonstration project. Co-payments were required from MAO clients in the community for all Medicaid services, on a sliding scale fee basis. Since analyses revealed that only 32.9% and 35.3% of the treatment group used the expanded community services during the first six and 12 months after enrollment, respectively, Table 6.2 presents mean and standard deviations of waived service use for those cases who did, in fact, use the services. Table 6.2 also presents the

Table 6.2

South Carolina Community Long-Term Care Project
Use and Reimbursement for Medicaid Waivered Service
For Utilizers Only on a Monthly Basis

Service	12 Month Cohort (N = 383)		
	Mean	Standard Deviation	% Using
Personal Care	\$136.85	\$119.91	32.6
Adult Day Care	161.80	146.45	6.5
Home Delivered Meals	33.00	18.41	2.6
Home Health	16.00	18.41	1.3
Respite Care	38.50	10.61	.5

Use and Reimbursements for Medicaid Waivered Service
On a Monthly Basis

Service	Six Month Cohort (N = 514)			12 Month Cohort (N = 383)		
	Mean	Standard Deviation	% Using	Mean	Standard Deviation	% Using
All Waivered Services	\$49.77	\$102.33	32.9	\$56.49	\$109.38	35.3
All Waivers Adjusted For Copayment	41.30	102.33	32.9	47.95	109.38	35.3
Preadmission Screening and Case Management	47.12	NA	100.0	47.12	NA	100.0
Total Incremental Cost	\$88.42			\$95.07		

average monthly mean and standard deviation for waived services for the entire treatment group.

As the data in Table 6.2 shows, personal care services were the most highly used waived service -- approximately 32% of the treatment group used these services during each time frame. No other service was used by more than 8% of the clients. Considering only those who used waived services, the average monthly Medicaid payment was \$151.37 and \$160.26 for the six- and 12-month cohorts, respectively. For the entire treatment group, this amounts to average waiver payments of \$49.77 and \$56.49 for the two time frames. A co-payment averaging \$15 was required for MAO clients in the community, reducing waived service costs for the whole sample by about \$8.

Based on the analysis of the costs of case management and pre-admission screening program at the South Carolina CLTCP, reported in Attachment 1, it is estimated that these services cost the Medicaid program about \$47.12 per client per month. Combining waived service use and case management costs, and adjusting for co-payments, suggests that the incremental costs of the South Carolina CLTCP were approximately \$88.42 and \$95.07 per client per month for the six- and 12-month study periods.

Impact on Traditional Services

Analyses of covariance using hierarchical multiple regression were performed on the South Carolina CLTCP Medicaid and Medicare utilization data to determine what impact the program had on existing service use and reimbursement, after controlling for baseline differences between the treatment and comparative groups. Analyses were performed for both six- and 12-month cohorts; a series of subgroup analyses also were performed. In most cases, regression models, including case-mix factors such as functional limitations in the activities of daily living, ambulation, and client and caretaker preferences for community care as rated by assessors, explained relatively little of the variance in utilization or reimbursements. For the Medicare analyses, the maximum variance explained by the covariate block was 12% in the case of nursing home use. As a result, the adjustment for case mix differences do not alter

findings in any of the analyses. Thus, unadjusted findings are presented here. Similarly, for the Medicaid analyses, the same set of covariates have relatively little explanatory power (although more than in the Medicare analysis), explaining at most 20% of the variance in the analysis of nursing home use. Nonetheless, in some cases, adjustment for case mix did alter the patterns of findings; for those analyses, adjusted as well as unadjusted results are presented. Detailed presentations of the overall sample and subgroup analyses are available in Appendix A.

Medicaid

Table 6.3 presents the results of the unadjusted analysis of utilization and reimbursements for existing Medicaid services. Participation in the South Carolina CLTCP had significant impacts on Medicaid-reimbursed nursing home use, with treatment clients less likely to enter and thus using less days (approximately three per month) of nursing home care than the comparative group. Reimbursements for nursing home care were approximately \$90 less per month for the treatment group than for the comparative group. This significant impact on use of nursing homes was offset by treatment clients using higher amounts of acute care and other medical services reimbursed by Medicaid. In the subgroup analysis, this effect was shown to result from extending Medicaid coverage to MAO eligible participants who remained in the community.

On the other hand, while the treatment group experienced lower average monthly payments for all traditional Medicaid services in the unadjusted analysis, adjustment for baseline differences in case mix resulted in an insignificant treatment effect on total traditional Medicaid payments. It should be noted, however, that the adjusted impact on traditional Medicaid payments was significant at $p = .08$ level for both time frames. Table 6.4 presents the results for the analysis of covariance on total traditional Medicaid payments.

Medicare

Participation in the South Carolina CLTCP had no significant impact on Medicare utilization or Medicare reimbursements under Part A or Part

Table 6.3
South Carolina Community Long-Term Care Project
Use and Reimbursement for Existing Medicaid Services
Unadjusted for Case Mix

Six-Month Cohort

Service	Treatment (N = 514)		Control (N = 518)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Acute Care Days	0.39	1.70	0.38	2.11	-0.14
Acute Care Reimbursements	\$18.80	\$99.72	\$10.53	\$61.78	-1.60
Skilled Nursing Days	7.08	11.24	9.99	12.11	4.00***
Skilled Nursing Reimbursements	\$210.95	\$340.24	\$306.70	\$377.38	4.28***
All Other Reimbursements	\$55.39	\$140.01	\$32.90	\$79.11	-3.17**
Total	\$285.14	\$356.84	\$350.13	\$389.83	-2.78**

12-Month Cohort

Service	Treatment (N = 383)		Control (N = 437)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
^A Acute Care Days	0.47	1.74	0.32	1.98	-1.11
Acute Care Reimbursements	\$17.10	\$83.67	\$7.24	\$27.04	-2.21*
Skilled Nursing Days	7.53	11.44	10.35	12.24	3.39**
Skilled Nursing Reimbursements	\$226.93	\$350.30	\$321.13	\$388.87	3.65**
All Other Reimbursements	\$53.25	\$119.30	\$29.30	\$55.48	-3.60**
Total	\$297.28	\$363.46	\$357.67	\$396.50	-2.27*

*p < .05

**p < .01

***p < .001

Table 6.4

South Carolina Community Long-Term Care Project
Total Existing Medicaid Utilization on a Monthly Basis
Adjusting for Baseline Differences in Case Mix^a

Time Frame Variable	Six Months (N = 995)			12 Months (N = 789)		
	Change in R ²	F of Change	Beta	Change in R ²	F of Change	Beta
<u>Covariates^b</u>						
Age	.190	46.43***	.069**	.196	38.09***	.073**
Ambulation			-.030			-.015
Client Preference			-.145**			-.124**
Caretaker Preference			-.291**			-.305**
Functional Limitations			.089**			.111**
<u>Group Assignment</u>	.003	3.28	-.052	.003	2.94	-.055

^aThe set of interaction terms did not add significant explained variance to the model and is not reported.

^bAmbulation: 1 = Impaired; 0 = Independent

Assessor-judged Client Preference: 1 = Home; 0 = Other

Assessor-judged Caretaker Preference: 1 = Home; 0 = Other

Functional Limitations in ADL: 0-4 = No Impairment to Severe Impairment

Group Assignment: 1 = Treatment Group; 0 = Control Group

**p < .01

***p < .001

B home health (see Table 6.5). For both time frames, there was relatively high use of Medicare-covered acute care services, with acute care services representing over 85% of Medicare payments for both the treatment and comparative groups. On the other hand, for both time periods, overall utilization and reimbursements for traditional Medicare services were lower for the treatment group than for the comparative group.

Summary of Findings

Table 6.6 summarizes the findings for the South Carolina Community Long-Term Care Project. By combining preadmissions screening (which resulted in substantially lower utilization of nursing home services), with relatively inexpensive case management and waived service costs, the South Carolina project had average monthly total public payments which were approximately \$66 less than those experienced in the existing system. This is an annual savings of almost \$800 per client, akin to a reduction of 7% of current program costs (as represented by the comparative group). These savings were moderated by extending Medicaid coverage for traditional care to Medical Assistance Only (MAO) participants who chose to remain in the community. Expanding coverage to MAO-eligibles resulted in increases for the overall treatment group in Medicaid expenditures for nonchronic services. In fact, it should be noted that overall treatment group Medicaid expenditures for traditional services, waived services, case management, and preadmission screening increased by approximately \$52 per month, though this increase is marginal in light of the relatively high variance in Medicaid utilization. By contrast, the major savings accrued to Medicare, where overall average monthly expenditures decreased by about \$118 per month. Again, this latter finding may be of marginal importance, given the relatively large variance in Medicare utilization.

In general, it appears that South Carolina's preadmission screening, case management, and expanded service program were able to decrease the use of nursing home services for a client sample having both high impairment and high likelihood of nursing home placement without increasing public costs. Individuals were provided with new long-term care options and the State of South Carolina, through state-

Table 6.5

South Carolina Community Long-Term Care Project
Use and Reimbursement for Medicare on a Monthly Basis

Six-Month Cohort

Service	Treatment (N = 406)		Control (N = 405)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Acute Care Days	3.55	5.56	4.16	6.52	1.44
Acute Care Reimbursements	\$539.69	\$901.45	\$646.36	\$1026.53	1.57
Skilled Nursing Days	1.20	4.09	1.69	4.70	1.61
Skilled Nursing Reimbursements	\$ 32.13	\$111.66	\$ 42.75	\$ 120.36	1.30
Home Health Visits	1.38	2.66	1.40	3.13	.05
Home Health Reimbursements	\$ 47.70	\$ 91.57	\$ 46.62	\$ 105.28	-.16
Total Medicare	\$619.52	\$937.89	\$735.73	\$1060.80	1.65

12-Month Cohort

Service	Treatment (N = 295)		Control (N = 317)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Acute Care Days	3.15	5.35	3.71	6.28	1.17
Acute Care Reimbursements	\$441.46	\$731.58	\$557.33	\$963.41	1.68
Skilled Nursing Days	.95	3.43	1.31	3.95	1.22
Skilled Nursing Reimbursements	\$ 27.00	\$101.65	\$ 34.01	\$109.62	.82
Home Health Visits	1.20	2.35	1.12	2.66	-.37
Home Health Reimbursements	\$ 40.43	\$ 77.70	\$ 35.47	\$ 81.97	-.77
Total Medicare	\$508.89	\$773.72	\$626.81	\$989.90	1.65

wide implementation of the model, may be able to reduce its long-term care expenditures in the future.

ON LOK SENIOR HEALTH SERVICES

On Lok Senior Health Services' Community Care Organization for Dependent Adults (CCODA) was unique among the projects included in the national evaluation. On Lok represents the only consolidated model of community-oriented long-term care currently operating in this country. The project provides all health and social services required by its nursing home eligible, aged clients in San Francisco's Chinatown and North Beach neighborhoods. All inpatient, outpatient, and health-related services, including co-payments and deductibles, are covered through the project. On Lok was paid quarterly by HCFA in lump sums to cover all treatment costs including case management. Thus, treatment clients did not use any existing Medicare Part A and Part B services, making analysis of On Lok's impacts on traditionally covered services more complicated. HCFA's Beneficiary Bill History Retrieval System data are available only on a subset of On Lok's comparative group participants. Data for this report comes from On Lok's internal utilization records kept for the larger CCODA "pool" group, which includes participants in prior On Lok programs who were grandparented into the CCODA demonstration, and from health diary data that were collected on the treatment and comparative group cohorts.

Diary data was collected for both treatment and comparative group members such that aggregations to fiscal quarters and a full year were possible. The yearly data were adjusted for participant length of stay and expressed as monthly utilization and payments, as for other projects. On Lok was able to check self-reports of service use with provider records, in most cases, and estimated that they under-represented service utilization for both groups by slightly over 1%.

It was possible to check HCFA records for 44 individuals or 63% of the comparative group. This sample loss was unacceptably high, particularly since about half of the lost cases were comparative group members who died early in the study, and for whom much higher than

average Medicare utilization might be expected. In addition, only eight months of HCFA data were available, further biasing the estimates for the comparative group since On Lok data suggested that much acute care and nursing home use occurred within the last quarter of the study. The results of this reliability check were discouraging, suggesting that On Lok's estimates of hospital days and hospital expenditures for the comparison group are two and four times higher than those derived from HCFA records respectively, even when allowing for days that were not covered by Medicare. Similarly, the project reported about one and one-half times as many skilled nursing days for the comparative group as were noted in HCFA records. However, this difference may reflect Medicaid coverage for nursing home care, which was not available for analysis by BPA. Detailed presentation of the reliability study is included in Appendix A. It is possible that the co-payments and biases indicated above account for these discrepancies.

Because all services were demonstration services when provided to treatment clients, no attempt is made to disaggregate demonstration from existing services. Costs for case management on a per client per month basis are estimated at \$80 (this analysis is reported in Attachment 2). However, since the On Lok procedure for assigning costs to treatment group clients included the case management costs as part of professional services, they are not separated out in this analysis.

One additional caveat is required in considering the On Lok findings. The subsample of On Lok treatment clients and the comparative group sample on which the analysis is based does not appear to be particularly representative of the On Lok CCODA population as a whole. The treatment and comparison groups both averaged higher monthly use of services and associated expenditures than did the CCODA group as a whole. The study groups were also more impaired than the CCODA population as a whole on measures of health and functional status.

Study Findings

Table 6.7 presents results from the analysis of On Lok's diary data on service use, with estimates of service expenditures derived from On Lok's cost accounting procedures for treatment clients and from local

Table 6.7

On Lok Senior Health Services
Estimated Utilization and Payments, All Sources,
On a Monthly Basis

Service	Treatment (N = 69)		Comparison (N = 70)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Professional Services	\$ 343.64	\$ 205.71	\$ 89.58	\$ 57.68	9.88***
Social Services	\$ 346.05	\$ 331.73	\$ 215.05	\$ 311.53	3.32***
Acute Care Days	.90	2.05	1.30	3.26	-.88
Acute Care Payments	\$ 383.49	\$ 937.37	\$ 936.50	\$2244.66	-1.90
Skilled Nursing Days	2.19	6.46	13.08	13.86	-5.95***
Skilled Nursing Payments	\$ 117.21	\$ 338.27	\$ 554.95	\$ 639.81	-5.05***
Total Payments	\$1240.39	\$1165.65	\$1796.07	\$2195.37	-1.87

Estimated Utilization and Payments, All Sources, on A Monthly Basis,
Participants in the Community at Intake

Service	Treatment (N= 65)		Comparison (N= 38)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Professional Services	\$ 348.18	\$ 208.50	\$ 94.30	\$ 61.42	-9.16***
Social Services	\$ 398.46	\$ 328.98	\$ 366.60	\$ 352.88	-.45
Acute Care Days	.83	2.02	1.06	2.06	.40
Acute Care Payments	\$ 357.52	\$ 928.93	\$ 802.93	\$1383.20	1.25
Skilled Nursing Days	1.06	4.29	2.44	5.66	1.30
Skilled Nursing Payments	\$ 65.59	\$ 259.62	\$ 91.66	\$ 227.84	.52
Total Payments	\$1170.12	\$1148.59	\$1355.44	\$1395.32	.69

***p \leq .001

normal and customary reimbursements for services to comparative group members. The table presents results first for the overall treatment and comparative study samples, and then for those members of each group who were in the community at intake. While the sample sizes for the second analysis are extremely small, they represent a more appropriate test of the program's impact, since 94% of the treatment group were in the community at the time of first assessment, while only 50% of the comparative group were in the community at first assessment. The second analysis is only of those in the community at the time of the baseline assessment, and thus avoids what in the first analysis may have been a comparison of the treatment group with a different, more severely impaired group of controls. The table presents data in four categories: professional services (e.g., physician, physical therapy, drugs, radiological services, occupational therapy, social work), social services (e.g., personal care, meals, laundry, transportation), skilled nursing facility, and acute care hospital. Utilization rates for nursing home and hospital services are also presented.

Examining the overall comparative study cohorts, results suggest significant reductions in nursing home use and expenditures, and close to significant reductions in hospital expenditures. While utilization of acute care facilities was not dramatically reduced for the treatment group, the reduction in public payments for acute care approached significance. In part, this reflected On Lok's ability to contract with hospitals in this over-bedded area for services at lower than average per diem rates. While acute and nursing home services account for some 83% of the comparative group's average monthly expenditures, these services represent only 40% of the expenditures for treatment group members. As a result of the savings accrued in these two service categories by the treatment group, total average monthly expenditures were lower than those of the comparative group, even though there were higher incremental costs for professional and social services for the treatment group than for the comparative group.

A more realistic assessment of On Lok's impacts may result from examining the lower portion of Table 6.7. Here, only those participants living in the community at the time of the first assessment are included

in the analysis. While reductions in both nursing home and hospital use are documented, they no longer approach statistical significance. Treatment clients averaged about 1.25 and 1.4 days less of hospital and nursing home use, respectively, than did comparative group members. As noted earlier, On Lok's ability to contract with hospitals for lower than average per diem rates did result in notably lower (though not statistically significant) expenditures for acute care payments. When acute and nursing home care expenditures are combined, they continue to represent a smaller proportion of the total expenditures for the treatment group than the comparative group community subsample. At the same time, those members of the comparative group residing in the community at the time of first assessment made more use of social services than did the comparative group as a whole. These factors combine to bring each group's costs closer, with the treatment group averaging about \$185 per month less than the community comparative subgroup. This difference is not statistically significant due to large variances and small sample sizes. On the other hand, the difference is substantively important if it could be generalized. The savings even in the second analysis amount to \$2,700 per client over a year, or a cost reduction of 16% of the costs experienced with the stricter comparative group.

It should be recalled that the sample sizes for these comparisons are extremely small, particularly given the high variance in utilization and expenditures. Statistical power analyses reveal that for both the overall comparative study and for the analysis of only those comparative study group members in the community at intake, the tests have power far below conventionally acceptable levels. In fact, the likelihood of incorrectly rejecting the alternative hypothesis of a positive program impact is over 50%. This does call for wariness in either blithely ignoring or accepting the On Lok findings on statistical grounds alone.

Summary of Findings

While the results presented above provide some evidence that On Lok's consolidated model of community-oriented long-term care was able to provide skilled nursing level of care participants with a rich, comprehensive and intensive package of services that stressed community

over institutional care without increasing public payments, a number of factors reduce the strength of these findings. First, the analysis is based on diary data rather than government Medicare and Medicaid records, since data were available for only a subgroup of the comparative group participants and no Medicare and Medicaid data were available on the treatment group's service use. Second, the available HCFA data does not tend to support the reliability of the diary data, though several factors confound the reliability study, and On Lok did provide some evidence for the reliability of the self-reports. Third, it was not possible to disaggregate On Lok service use data by payment type and many of the services used by comparative group members are reimbursed outside of the Medicaid and Medicare systems (e.g., Title XX). Fourth, the On Lok treatment and comparative groups were not particularly representative of the overall CCODA population from both the perspectives of functional status and utilization of acute and nursing home care. Finally, about one-half of the On Lok comparative group were in nursing homes at the time of intake, reducing the effective sample size for comparative study to less than 100 cases. As a result, the research design has inadequate statistical power, given the large variance in service use and associated payments. Consequently, there is a higher risk of incorrectly accepting the null hypothesis of no program impact on public costs.

Given these concerns, as well as the rich array of services provided by the On Lok service package, it is noteworthy that the program appeared to produce patterns of service use with associated public payments lower than those experienced in the existing system. Moreover, these savings continued to exist, even when a stricter comparative group was used to adjust for some of the problems noted above. Thus, while a definitive test of the consolidated model's impact on public costs has still yet to be performed, the tentative findings do indicate substantively, if not statistically, significant cost reduction.

PROJECT OPEN

Project OPEN at Mount Zion Hospital in San Francisco used Medicare 222 waivers to provide case management and expanded community services to frail elders within a defined catchment area of the city. Less than 1% of the sample ever used Medicaid-reimbursed services, as a reflection of targeting to Medicare-only eligibles and because of the presence of an MSSP site, also at Mount Zion, that targeted the Medicaid (MediCal) population. The project expected to reduce the use of nursing home and hospital care through service coordination. The project has analyzed their own data, using client and provider reports; the project's analysis includes all service costs, not only reimbursements through public payors. As a result of BPA's focus on only those services provided through Medicare and Medicaid, the public cost of care analysis provided below is different than the project's analysis of total costs. It is important to note that in the project's own analysis (as well as BPA's), it was shown that comparative group members used nearly the same amount of the expanded community services as did the treatments. The comparative group members either purchased these services out-of-pocket or received them through other public sources, without the assistance of case management.

Data on the use and reimbursement of Medicare Part A and Part B home health were obtained for a 12-month period for 268 individuals, or 80% of the sample available for the functional assessment analysis (see Chapter 5). Office of Direct Reimbursement (ODR) data on the use of waived services was also available. It is noteworthy that HCFA Beneficiary Bill History File data for Part A services differed from project estimates by less than 6%, although the project estimated greater use of Part B services. Project OPEN had access to Part B information which is not included in the HCFA files. However, including Part B information would not substantially alter the pattern of findings observed below, since treatment clients averaged about \$60 less per month than did comparative group participants.

Demonstration Services

Project OPEN provided a broad array of community-oriented services in addition to intensive case management. These services included homemaker/chore, transportation, adult day social care, adult day health care, physician services and visual aids, to name only a few (see Attachment 2 for a complete list of waived services). Waivered services were used by about 94% of the treatment group. The most highly used services were homemaker chore (63%), escort/transportation (58%), eyeglasses and other prosthetic devices (55%), physician services (50%) and drugs (46%). Of the remaining 15 waived services, none were used by more than 30% of the sample. Table 6.8 provides data on average monthly reimbursements for the most highly used services, and total average monthly Medicare reimbursements for all waived services. The total of about \$195 can be contrasted with the comparative group's \$161 per month in out-of-pocket expenditures or use of other public programs to access these services. It should also be noted that much of the waived service use (though not expenditure) was through project waivers covering co-payments for services partially reimbursed through existing Medicare Part B coverage.

Case management costs were analyzed in detail for Project OPEN; the results of that study are provided in Attachment 1. BPA estimated that case management services at Project OPEN cost Medicare about \$116.84 per client per month. Project OPEN estimated these case management costs at \$96.52. The difference is due to Project OPEN and BPA using different approaches to including overhead costs and for estimating average monthly caseload. The BPA figure is used here.

Combining the costs of case management and expanded community services, the incremental costs for Project OPEN are \$312.21 per client per month.

Impact on Traditional Services

While some baseline differences in case mix were observed between the treatment and comparative groups in Project OPEN, these differences were not large enough to necessitate analysis of covariance. Unadjusted means and standard deviations for traditional Medicare utilization and

Table 6.8
Project OPEN
Use and Reimbursements for Medicare Waivered Services
on a Monthly Basis
(N = 220)

Service*	Mean	Standard Deviation	Percent Using
Homemaker/Chore	\$114.54	\$196.40	63.0%
Escort/Transportation	3.70	11.97	58.0
Eyeglasses and Other Prosthetics	9.62	24.13	55.0
Physician Services	1.59	3.54	50.0
Drugs	8.25	19.42	46.0
Adult Day Care	16.74	119.99	11.0
Dental Care	9.32	58.09	25.0
Total	\$195.37	\$203.87	94.0
Case Management	\$116.84		
Total Incremental Cost	\$312.21		

*Selected waiver service categories only.

reimbursement are provided in Table 6.9. As the table indicates, Project OPEN had no significant effects on utilization of Medicare Part A and Part B home health. Both the treatment and comparative groups averaged about one day per month of acute care, with the treatment group using slightly less service per month. Less than 1% of either group used nursing homes, and both groups averaged less than one home health visit per month. Overall, acute care utilization represented more than 90% of all Medicare costs. On a monthly basis, the treatment group averaged almost \$150 less than the comparative group in Medicare reimbursements, but this difference was not statistically significant due to relatively high variance.

Summary of Findings

Table 6.10 summarizes the results of the Project OPEN analyses. While the project was able to reduce the use of Medicare-reimbursed acute care services, as well as other traditional Medicare-reimbursed services, these reductions were not sufficient to offset the incremental costs of case management, community service expansion, and co-payment coverage for its participants. The fact that both Project OPEN participants and the comparative group participants made little use of institutional long-term care allowed little possibility for waived services and case management to achieve savings by controlling nursing home use. To the extent that Project OPEN clients did experience more positive outcomes in terms of life satisfaction/social involvement and cognitive functioning (at least in the short run), program designers could argue that the higher costs of \$163 per client per month is justifiable, especially since it is a highly variable (statistically insignificant) cost. Further, since it appeared that comparative group participants were able to obtain many of the same services without case management or expanded Medicare coverage, it would seem that it was case management, as opposed to the community services, that resulted in the limited acute care control that was demonstrated. This possibility suggests that the expanded availability of case management services alone -- without increased coverage for other community services -- may represent a cost-

Table 6.9

Project OPENUse and Reimbursements for Medicare on a Monthly Basis

Service	Treatment (N = 178)		Comparative (N = 90)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Acute Care Days	1.08	3.00	1.37	2.28	.79
Acute Care Reimbursements	\$446.17	\$1,151.63	\$572.81	\$ 944.65	.96
Skilled Nursing Days	.01	.09	.03	.25	.73
Skilled Nursing Reimbursements	\$ 2.23	\$ 22.69	\$ 15.23	\$ 86.97	1.39
Home Health Visits	.71	2.01	.73	1.80	.08
Home Health Reimbursements	\$ 38.90	\$ 98.49	\$ 48.30	\$ 140.67	.57
Total Medicare	\$487.31	\$1,186.96	\$636.34	\$1,003.74	1.02

Table 6.10
Project OPEN
Summary of Monthly Medicare Payments

	Treatment Group	Comparative Group
	Mean (N = 178)	Mean (N = 90)
Medicare Part A and Part B Home Health	\$487.31	\$636.34
Waivered Medicare Services	195.37	-0-
Case Management	116.84	-0-
Total	\$799.52	\$636.34

effective approach with a minimally-impaired, middle-income target group such as that served by Project OPEN.

SAN DIEGO LONG-TERM CARE PROJECT

The Long-Term Care Project of North San Diego County used Section 222 waivers to provide case management and expanded coverage for Medicare services. The project intended to reduce the need for hospitalization following acute exacerbations of chronic conditions and prevent the need for nursing home placement. It was also anticipated that reduced nursing home and hospital use would be reflected in lower rates of Medicaid utilization and reimbursement. While the project primarily targeted Medicare-enrolled frail elders, some treatment and comparative group members were eligible for Medicaid services.

Traditional Medicare Part A and Part B home health utilization and reimbursement data were available for 12 months, but because of concern with the timing of bill processing, analyses were performed separately for six- and 12-month periods. Data were available for 767 individuals, or 92% of the study population, with missing data equally distributed across the treatment and comparative groups.

Medicaid (in California, MediCal) data were obtained through the State of California, Department of Health Services, with the assistance of the MSSP project, for 247 cases (30% of the clients were MediCal-eligible). This MediCal utilization data, however, was not used here because of severe data formatting and quality problems. It is estimated that MediCal data would not influence findings, since an upper bound estimate of MediCal expenditures, which is included in this analysis, does not change the results.

Demonstration Services

The San Diego Long-Term Care Project provided a rich array of expanded services under Medicare, including skilled nursing and other professional home visits, adult day health care, medical social services, home health aides, homemakers, meal preparation and delivery, transportation, medical equipment, and health education. As Table 6.11

Table 6.11
Long-Term Care Project of North San Diego County
Use and Reimbursements for Waivered Services
on a Monthly Basis
(N = 514)

Service	Average Payments	Standard Deviation	Percent Using
Health Education	\$ 94.28	\$ 53.00	95.0%
Homemaker/Chore/Home Health Aide	118.20	120.72	80.0
Cab Transport	10.67	37.47	47.0
Skilled Nursing	16.20	54.43	35.0
Total	\$307.19		
Case Management	\$133.67		
Total Incremental Costs	\$440.86		

reveals, health education services were used by 95% of the clients. Homemaker services were used by 80% and transportation by 47% of the clients. All other services were used by no more than a third of the cases, but 100% used at least one waived service on an average monthly basis. Total average monthly reimbursements for these services are about \$307 per client, with the health education, homemaker, and transportation services together accounting for some 73% of the total.

Detailed analysis of the costs of the case management offered through the LTCP were conducted and are available in Attachment 1. It was estimated that case management cost \$133.67 per client on a monthly basis. It is possible that this estimate is biased upward, when considering a full 12 months of client involvement in the project, since it was based on a period including intensive intake activities. In Appendix A, BPA made a "rough" adjustment to this figure, based on modifications in staffing levels after the intake period. This adjustment reduced the estimate to \$103 per month per client. However, the higher figure is used in the subsequent discussion because it is consistent with the methodology of the case management cost analysis used in other sites.

Combining the payments for waived service use and case management, the estimated incremental costs for the demonstration intervention was \$441 per client per month.

Impact on Traditional Services

Analysis of covariance using hierarchical multiple regression was performed to examine the impacts of the San Diego LTCP on traditional Medicare utilization and reimbursements, after adjusting for baseline differences in case mix. The results of these analyses in no way altered the pattern of findings from unadjusted analysis, so the unadjusted results are presented here. The covariate block representing baseline differences in the treatment and comparative group, including ADL, MSQ, living arrangements, social resources and morale, never accounted for more than 3% of the variance in service use or payments. Results of the regression analyses are presented in Appendix A.

Findings presented in Table 6.12 indicate that overall, participation in the LTCP had no impact on the utilization of acute and skilled nursing facilities during either the first six or first 12 months after enrollment. It is interesting to note that both treatment and comparative group members averaged about one day of acute care utilization per client per month during the first year, with only marginally lower use during the first six months. Acute care represents about 95% of the treatment group's Medicare payments (85% for the comparative group). Both groups averaged less than one day of nursing home use per month for both time frames, with the treatment group averaging slightly less during each six-month period.

A significant group difference was observed with respect to the use of Medicare Part A and Part B home health services. While treatment group members averaged .33 visits per month, the comparative group averaged 1.8 visits per month, resulting in a savings of \$55.76 for the treatment group in the six-month analysis. Marginally lower utilization of hospital and nursing homes, and significantly lower home health service utilization resulted in a cost savings of \$123.37 per treatment client per month in Medicare reimbursements during the first six months relative to the comparison group research. This effect is significant at the $p = .10$ level. In terms of the 12-month analysis, lower utilization of home health services was observed for both groups, but the between-group differences were still significant. However, the total cost difference between groups for all reimbursed services is reduced to \$74.65 per client per month at the end of one year, no longer approaching significance. It appears that while the LTCP may have had some effect on existing Medicare-covered services during the first six months following enrollment, this effect diminishes given a longer time frame.

MediCal data were not available for analysis. However, if all hospital and nursing home days recorded in the Medicare data set but not reimbursed by Medicare were reimbursed by MediCal, the comparative group's average monthly costs would be increased by \$119, while the treatment group's average monthly costs would be increased by \$72 for the 12-month study period. This, in all likelihood, represents the

Table 6.12
Long-Term Care Project of North San Diego County
Use and Reimbursements for Medicare on a Monthly Basis

Six Months

Service	Treatment (N = 512)		Control (N = 253)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Acute Care Days	1.02	2.27	1.05	2.25	.21
Acute Care Reimbursements	\$360.45	\$888.99	\$424.92	\$1133.64	.79
Skilled Nursing Days	.07	.64	.12	.89	.84
Skilled Nursing Reimbursements	\$ 4.85	\$ 45.94	\$ 7.98	54.79	.76
Home Health Visits	.33	1.62	1.79	3.81	5.84***
Home Health Reimbursements	\$ 13.49	\$65.14	\$ 69.25	\$146.44	5.78***
Total Medicare	\$378.79	\$900.23	\$502.16	\$1172.86	1.47

12 Months

Service	Treatment (N = 427)		Control (N = 211)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Acute Care Days	1.09	2.10	1.04	2.02	.29
Acute Care Reimbursements	\$409.02	\$885.45	\$436.48	\$1090.81	.32
Skilled Nursing Days	.08	.64	.11	.76	.50
Skilled Nursing Reimbursements	\$ 5.18	\$ 46.41	\$ 6.81	\$ 45.13	.42
Home Health Visits	.30	1.67	1.48	2.89	5.51***
Home Health Reimbursements	\$ 12.23	\$ 66.26	\$ 57.80	\$ 112.14	5.45***
Total Medicare	\$426.45	\$893.61	\$501.10	\$1132.95	.83

***p ≤ .001

upper limit of the impact of the project on MediCal use, since only one-third of each group were Medicaid eligibles.

Summary of Findings

Table 6.13 summarizes the findings for the Long-Term Care Project of North San Diego County. While some reduction in the use and associated reimbursements for traditionally covered Medicare and Medicaid services was noted for this project, these impacts were offset by additional costs associated with case management and the waived services. Thus, while combined Medicare and estimated Medicaid savings were equal to about \$121 per client per month, the waived service package and case management costs added over \$440 per month to the costs of care when compared with the existing system, resulting in an additional average of \$319 in public payments per treatment client. Since there was little use of nursing home care by either the treatment or comparative group, the additional costs associated with expanded services needed to be offset by reductions in acute care and home health care service costs. The reduction in traditionally covered Medicare home health services was significant, but there was little or no reduction in acute care use. In general, these results do not support the expectation that expanded community-oriented services and case management in this project helped this community-residing, moderately-impaired sample in any significant way to avoid acute exacerbations of chronic diseases and resulting hospitalization.

NEW YORK CITY HOME CARE PROJECT

Through the use of case management and Medicare 222 waivers to cover three services not traditionally provided through Medicare, the New York City Home Care Project's four sites attempted to reduce the overall use of Medicare-reimbursed acute and long-term care services. The project targeted frail elders with need for between eight and 20 hours of homemaker/personal care services on a weekly basis, who because of income were ineligible for the Medicaid-sponsored personal care program available in New York State. Some members of the treatment and

Table 6.13
Long-Term Care Project of North San Diego County
Summary of Monthly Public Payment Findings

	Treatment Group	Comparative Group
	Mean (N = 427)	Mean (N = 211)
Medicare Part A and Part B Home Health	\$426.45	\$501.10
Medicaid	72.00	119.00
Waivered Services	307.19	-0-
Case Management	133.67	-0-
Total	\$939.31	\$620.10

comparative groups, however, became eligible for Medicaid during the demonstration period. It was anticipated that lower rates of utilization of medical services among the treatment group would result in lower utilization of Medicaid services for those who did, in fact, become eligible for Medicaid benefits.

Traditional Medicare Part A and Part B home health utilization and reimbursement data for approximately eight months were available for a total of 619 cases, 88% of the sample used in the participant outcome analyses, with greater sample loss for the comparative group than for the treatment group. Of the 69 participants who became eligible for Medicaid, Medicaid utilization and reimbursement data were available for 44 cases, or 64%. This sample loss is quite high; therefore, the findings must be viewed with caution. An effort was made to collect data on personal care/attendant services funded through Medicaid and administered by New York City. Of the 69 participants who were Medicaid eligible, only 49% used this service, and of these, only ten treatment group members (2%) and ten comparative group members (5%) made use of the services during the study period. Unfortunately, there were numerous coding errors and significant missing data in the paper records supplied on personal care aide/attendant use from New York City, so this information is not included in the analysis.

Demonstration Services

Table 6.14 provides information on the use of the three waived services: personal care/homemaker, transportation/escort and prescription drugs and biologicals. Data is only presented for treatment group members, because if comparative group participants used these services at all, they were purchased through non-public third party payors or out-of-pocket. As the table reveals, the most frequently used service was the personal care/homemaker, used by all but one treatment group client. These clients received on the average 57.5 personal care hours per month. About 67% of the clients used the transportation/escort service or used waivers to purchase drugs and biologicals. The average monthly Medicare reimbursement for the waived services was \$407 per

Table 6.14
New York City Home Care Project
Use and Reimbursements for Waivered Services
on a Monthly Basis
(N = 503)

Service	Average Payments	Standard Deviation	Percent Using
Personal Care/Homemaker	\$374.47	\$124.89	99.8%
Drugs and Biologicals	23.93	23.86	67.0
Transportation/Escort	24.45	30.33	67.0
Total	\$407.00	\$139.70	
Case Management	\$ 96.04		
Total Incremental Cost	\$503.04		

client. Of this total, personal care/attendant services accounted for about 92%.

The results of the analysis of costs of case management (Attachment 1) in the New York City Home Care Project revealed considerable variation among the project's sites in the estimated monthly per client cost of the administrative service that planned and coordinated client's use of services. The monthly per client cost of case management ranged from \$79.32 to \$105.25, with an average of \$96.04 per client per month. Site characteristics and staff salaries appeared to account for the variation.

When waived service use and case management costs are combined, the New York City demonstration project results in an incremental cost of approximately \$503 per client per month.

Impact on Traditional Services

Analysis of covariance using hierarchical multiple regression was applied to the New York City Home Care Project Medicare Part A and Part B home health utilization and reimbursement data to adjust statistically for baseline differences in case-mix between the treatment and comparative groups. These adjustments had no major impact on findings, because the block of covariates including race, number in household, ADL, MSQ, and unmet needs in ADL never account for more than 3% of the variance in service use or reimbursements. The regression-adjusted results are available in Appendix A. Unadjusted results are presented in Table 6.15.

As the table suggests, participation in the HCP's program of case management and waived services had no impact on Medicare-reimbursed acute care hospital or home health service use. Treatment clients averaged 1.8 hospital days per month, while comparative group participants averaged 1.7 days per month. Treatment group hospital reimbursements were approximately \$25 more per month than for the comparative group. Both groups averaged about one home health visit per month. As the data in Table 6.15 indicates, the treatment group had lower use and reimbursements for skilled nursing facilities than the comparative group. But since less than 2% of either group used skilled nursing

Table 6.15
New York City Home Care Project
Use and Reimbursements for Medicare and Medicaid
On a Monthly Basis

Medicare

Service	Treatment (N = 458)		Comparative (N = 161)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Acute Care Days	1.78	3.35	1.72	3.39	-.47
Acute Care Reimbursements	\$505.07	\$ 967.78	\$480.73	\$ 992.42	-.21
Skilled Nursing Days	.02	.29	.09	.67	1.20
Skilled Nursing Reimbursements	\$ 2.45	\$ 33.65	\$ 9.57	\$ 84.37	1.04
Home Health Visits	1.04	2.40	.99	2.44	-.23
Home Health Reimbursements	\$ 42.88	\$ 109.08	\$ 46.31	\$ 114.79	.34
Total Medicare	\$550.41	\$1,001.32	\$536.62	\$1,025.19	-.15

Medicaid

Service	Treatment (N = 30)		Comparative (N = 14)		t-value
	Mean	Standard Deviation	Mean	Standard Deviation	
Acute Care Days	.36	.76	1.57	2.61	-1.7
Acute Care Reimbursements	\$352.73	\$837.48	\$761.13	\$1,260.51	-1.1
Nursing Home Days	.53	1.53	.40	1.37	.26
Nursing Home Reimbursements	\$140.19	\$420.49	\$ 81.46	\$ 246.99	.59
All Other Medicaid Reimbursements	\$ 22.68	\$ 27.71	\$ 70.46	\$ 50.16	-3.33***
Total Medicaid	\$515.60	\$976.14	\$913.05	\$1,294.76	-1.02

***p < .001

facilities, and nursing home reimbursements accounted for less than 1% of total Medicare reimbursements on a monthly basis, this result is not particularly important.

Table 6.15 also reveals that the impact on Medicare nursing home use was not associated with Medicaid nursing home care reductions. In fact, less than 1% of either group used Medicaid-reimbursed nursing homes. While the comparative group did have notably higher use and reimbursements for hospital and other services under Medicaid -- mostly reflecting one comparative group member who spent over ten months in a hospital -- large variances and a small sample size result in non-significant findings for all categories of Medicaid except for the "other" category. The "other" reimbursements category shows a difference of \$48 ($t = -3.33$, $p < .001$). This category consists primarily of drug costs and, since drugs were covered under the Medicare waivers for the treatment group, it is logical that their other reimbursements should be lower. Finally, while Medicaid reimbursements on a monthly basis average \$515 for the treatment group users and \$913 for the comparative group users, even if all Medicaid eligibles were using at the same rate as these cases, overall the average monthly combined public payments would only be raised by about \$55 for the treatment group and \$113 for the comparative group.

Summary of Findings

Table 6.16 summarizes the results for the New York City Home Care Project. As the table suggests, several factors combined to produce an additional average \$458 in public payments per treatment client per month over the existing system. The project did not reduce traditional Medicare service utilization costs and, in fact, resulted in marginally higher levels of traditional service use. The project did result in reduced payments for the small proportion of Medicaid-eligible participants, but when considered from the perspective of the full study samples, this did not significantly alter the overall findings. At the same time, the relatively high costs of the waived services and the case management package essentially appear as additional costs because there was little or no reduction in traditional Medicare and Medicaid

Table 6.16
New York City Home Care Project
Summary of Monthly Public Payment Findings

	Treatment Group	Comparative Group
	Mean (N = 458)	Mean (N = 161)
Medicare Part A and Part B Home Health	\$ 550.41	\$ 536.62
Medicaid ^a	55.26	113.42
Waivered Services	407.00	-0-
Case Management	96.04	-0-
Total	\$1,108.61	\$ 650.04

^aOn a per capita basis for all members of the treatment or comparative group, assuming all Medicaid eligibles utilized services at the same rate as those for whom data was available.

service use. While it may be possible to attribute these differences to the greater levels of impairment among the treatment group, this seems unlikely since case-mix differences which were measured had little relationship to service utilization patterns or public payments.

COMPARATIVE ANALYSIS

Cross-site comparisons of program impacts on utilization and reimbursements must be viewed with caution for a variety of reasons, including differences in client group composition among the five projects, differences in treatment/comparative sample comparability, and differences in types of public or third party coverage available to participants. The following section provides a comparative cross-site analysis of the five projects, but the analysis does not include statistical tests for differences between projects. The cross-site observations are presented in two sections. First, results from the individual projects are summarized and compared. Then "breakeven analyses" which represent a standardized measure of cost impact for each project are presented and compared.

Comparisons of Utilization and Reimbursement Findings

Table 6.17 summarizes the combined estimated monthly total reimbursements from Medicaid and Medicare including case management and waived services for the five projects. Only two projects, South Carolina and On Lok, show estimated treatment group costs lower than those for the control/comparison groups on a monthly basis. The three Medicare waiver projects with the goal of upgrading the home care package available to community-residing Medicare beneficiaries all show costs higher for the treatment group than for the comparative group, ranging from \$163 in additional costs in Project OPEN to over \$458 in additional costs in New York City.

It is noteworthy that these three Medicare-waiver projects, all in relatively high-cost service areas, show very similar levels of reimbursements for the control/comparison groups even while these groups differ markedly in levels of impairment; the three projects range from

Table 6.17
Coordinated Community-Oriented Long-Term Care Projects
Estimated Combined Monthly Medicaid and Medicare Payments

Project	Treatment Group	Comparative Group	Treatment/Comparative Group Cost Difference ^a
New York City	\$1,108.61	\$ 650.04	+\$458.57
San Diego	939.31	620.10	+ 319.21
Project OPEN	799.52	636.34	+ 163.16
South Carolina	896.37	962.13	- 65.76
On Lok ^b	1,170.12	1,355.44	- 185.32

^a"+" indicates additional public costs associated with the project, while
 "-" indicates decreased public costs.

^bOnly comparative study participants in community at intake.

the least to the most impaired samples included in the national evaluation. This finding is consistent with results found throughout the analysis of utilization and reimbursement data. In that analysis, case mix factors -- such as levels of functional and cognitive impairment and demographic factors -- have little to no explanatory power with regard to utilization or reimbursement. Case mix in terms of functional disability -- the usual basis for "targeting strategies" -- is not, therefore, the source of the observed variations in average costs of care, nor in the observed differences between the demonstration and existing systems of care in utilization and reimbursement outcomes. Such findings imply that targeting strategies based on these traditional approaches to screening clients will not succeed in reducing costs.

Tables 6.18 and 6.19 summarize several other areas of utilization and reimbursement findings in an attempt to provide a better understanding of factors which may account for variations in cost outcomes. One clear area of difference between the projects was in the relative utilization and relative proportion of total costs attributed to waived services and case management. Since On Lok's CCODA involved waived coverage for a consolidated package of services, it cannot be compared with the other projects in this respect. But among the remaining projects, a clear difference emerged. The preadmission screening program of the Community Long-Term Care Project in South Carolina offered a less costly waived services package and offered waived services to a far smaller proportion of the participants than did other projects. In the other three projects waived services were used by nearly all participants, in contrast to only about one-third of the South Carolina participants who used waived services. Waivered services, including preadmission screening and case management, only accounted for some 11% of the total monthly costs of care for South Carolina, whereas in the other projects, such services accounted for 39% to 51% of the total costs. It would appear, then, that at least with regard to programs operating under traditional fee-for-service reimbursements (with or without prospective interim payment systems), the ability to control the use of waived services is a major factor in achieving cost containment objectives.

Table 6.18
Coordinated Community-Oriented Long-Term Care Demonstration Projects
Waivered Services and Case Management Payments
Proportion Using and Proportion of Total Payments

	New York City	San Diego	South Carolina	Project OPEN
<u>Incremental Costs</u>				
Waivered Services	\$407.00	\$307.19	\$ 47.95	\$195.37
Case Management	96.04	133.67	47.12	116.84
Total	\$503.04	\$440.86	\$ 95.07	\$312.21
Proportion of Clients Using Waivered Services	99%	100%	35%	95%
Waivered Services as Proportion of Total Combined Monthly Payment	45%	51%	11%	39%

Table 6.19
 Utilization of Acute Care Facilities and Nursing Homes
 (Average Number of Days of Utilization per Month
 and the Proportion of Total Participants Using the Service)

	New York City		San Diego		South Carolina		Project OPEN		On Lok	
	Average Days/Mo.	Percent of Users	Average Days/No.	Percent of Users	Average Days/Mo.	Percent of Users	Average Days/No.	Percent of Users	Average Days/No.	Percent of Users
Combined Medicaid and Medicare Monthly Use										
Acute Care ^a	1.84	41%	1.16	50%	3.38	67%	1.17	49%	.91	22%
Nursing Home Care ^a	.09	1%	.13	3%	11.32	42%	.02	1%	1.56	17%

^a Average monthly use and the proportion of participants using a service is based on an average of the treatment and control/comparison groups and by adding Medicaid- and Medicare-reimbursed services.

Tables 6.19 and 6.20 provide some additional clues on those factors that determine overall costs of care and project impacts on costs of care. In Table 6.19, the average amount of use of hospital and nursing home care on a monthly basis for treatment and control/comparative groups combined (since both the treatment and control groups targeted the same population in terms of functional status) are displayed for each project, as well as the proportion of clients using these services. While targeting on the basis of functional impairment appears to have little relevance to cost-effectiveness, targeting on the basis of participant groups' actual likelihood of nursing home and hospital use does appear influential. The South Carolina and On Lok projects have notably higher rates of nursing home use both from the perspectives of the proportion of clients using such care and the average length of stay per month. South Carolina project participants were almost as likely to use nursing homes as not, and averaged more than 11 days of nursing home care per month. Utilization of nursing home care by On Lok participants in the community at intake was much lower, but still nearly one fifth of the participants used nursing home care, and they averaged more than one and one-half days of nursing home care per month. These utilization levels were notably higher than in the remaining projects, where 3% or less used nursing homes at all, and averaged substantially less than a quarter of a day of such care per month. It would appear that identification and targeting of services to individuals with real risk of nursing home placement, or with a current desire for placement, is crucial for obtaining cost containment impacts. This approach to targeting looks much more promising than the more commonly advocated approaches of targeting on the basis of actual functional status or demographic factors.

While variation in use of acute care services was observed as well, it was not as broad as the variation found in nursing home utilization. With the exception of On Lok, which appears to have experienced relatively low levels of acute care use suggesting a relatively stable chronic care population, all other projects experienced nearly half of their clients using hospital care. The high rates observed in South Carolina at least partially reflect their application of the

Table 6.20
Coordinated Community-Oriented Long-Term Care Demonstration Projects:
Estimated Impacts on Existing Services,^a on a Monthly Basis

Impacts	New York City ^b		San Diego ^c		South Carolina ^d		Project OPEN ^e		On Lok ^e	
	Impact	Signifi- cance	Impact	Signifi- cance	Impact	Signifi- cance	Impact	Signifi- cance	Impact	Signifi- cance
<u>Impact on Medicare Use</u>										
Acute Care Days	+06	NS	+05	NS	-56	NS	-29	NS	-23	NS
Skilled Nursing Days	-07	NS	-03	NS	-36	NS	-02	NS	-1.38	NS
Home Health Visits	-05	NS	-1.18	$p \leq .001$	+08	NS	-02	NS	NA	NA
<u>Impact on Medicare Expenditures</u>										
Acute Care Days	+24.34	NS	+27.46	NS	-115.87	NS	-126.64	NS	-445.41	NS
Skilled Nursing Days	-7.12	NS	-1.63	NS	-7.01	NS	-13.00	NS	-26.07	NS
Home Health Visits	-3.43	NS	-45.57	$p \leq .001$	+4.96	NS	-9.40	NS	NA	NA
Total	+13.79	NS	-74.65	NS	-117.92	NS	-149.03	NS	NA	NA
<u>Impact on Total Medicaid Expenses</u>										
	-663.72	NS	-4.70	NS	-42.37	NS	NA	NA	NA	NA

^a"+" indicates additional use or public costs associated with project, while "-" indicates decreased use or public costs.

^bNew York City estimates based on eight months; all other project estimates based on 12 months. Total N for Medicaid estimate is 44.

^cSan Diego Medicaid use is estimated.

^dSouth Carolina Medicaid waiver costs adjusted for copayments.

^eOn Lok does not disaggregate Medicaid and Medicare. Most savings would probably accrue to Medicaid, given impact on nursing homes; waiver estimates based on all services provided, other than nursing home and hospital. Only comparative study participants in the community at intake are included.

preadmission screening approach to hospital and nursing home candidates. Variations in hospital use are of greater importance in evaluation of programs that serve individuals with little or no nursing home use, since reductions in acute care use for those individuals are the principal type of savings which can potentially offset the extra costs associated with case management and waived services.

As the analyses in Table 6.20 reveal, however, no project resulted in statistically significant reductions in hospital use or reimbursements because of the small magnitude of effects and the relatively large levels of variance in utilization. Nonetheless, the South Carolina, Project OPEN, and On Lok projects were all associated with lower use of acute care hospitals, with the effects almost achieving strict statistical significance at the .05 level in all cases. For both the San Diego and the New York City projects, higher rather than lower hospital utilization was found for the treatment group than for the comparative group. No project showed statistically significant reductions in skilled nursing use or reimbursement. It appears that, in general, community care services have some impact on traditionally covered acute care utilization, but not as much as for nursing home care.

The data in Table 6.20 show mixed results concerning the projects' impacts on the cost of care. All projects reduced costs for some of the types of traditional Medicare and Medicaid expenditures, with Project OPEN and On Lok reducing costs for all types of such expenditures. With two exceptions -- Medicaid-reimbursed nursing home care in South Carolina and Medicare-reimbursed home health care in San Diego -- the savings estimated were not statistically significant at the .05 level. This finding of nonsignificance means that the savings were not consistently being realized across all clients, and raises the question, therefore, of how reliable the reduction in use of traditional services by clients in the demonstration projects is as a guide for future policymaking and program design. The savings could be due to random chance. The next section illustrates that many of these cost savings in use of traditional services are offset by the incremental costs of waived services and case management. Whether the positive effects on reducing traditional services could be sustained, while the costs of

achieving the effects were reduced (e.g., lowering the costs of waived services and/or case management) raises a question to be addressed later.

There are a number of problems in making these types of comparisons across the five demonstration projects. These problems include variations in medical care pricing and practice patterns across communities, and the difficulty in taking all components of costs into account when comparing average total monthly costs of care across projects. A standardization approach which attempts to overcome these problems is presented below.

Standardized Comparisons: The Breakeven Analysis

As suggested above, the comparisons of project impacts on total public costs of care are complicated by regional differences in medical care pricing and practice patterns, bed availability, and similar factors. At the same time, it is difficult to develop a clear picture of overall program impacts, given the many components of the costs of care and the variations in magnitude and direction of program impact. As described earlier, a standardization approach based on the notion of expressing all elements of the cost of care in terms of average payment by Medicare for an acute care day (or average payment by Medicaid for a nursing home day) was developed. The goal was to compare for each project the incremental or add-on costs of the waived service package and case management services with the utilization and cost-containment impact of the project on traditionally covered Medicaid and Medicare services. To the extent that traditional service utilization was controlled so that associated payments were equal to or less than the incremental costs of the case management and expanded service package, the program could be said to break even, that is, to represent a viable cost-containment strategy. To the extent that waived services and case management costs were greater than any cost-containment impacts on traditionally covered services resulting from utilization controls, then the project could not be said to break even or to represent a viable cost-containment strategy. Further, the approach provides a simple basis for comparing project results. Comparisons are expressed in terms

of the additional days of acute care (or nursing home care) that would be required in order to reach a breakeven position.

Table 6.21 provides the results of the breakeven analysis for the five projects. First, the impact of each project on traditional Medicare or Medicaid services was identified. This was the difference in average monthly costs between treatment and control or comparative groups. This difference was then expressed in terms of an independently-derived estimate of the payor's average daily reimbursement for the most highly utilized services (e.g., acute care hospital days for Medicare and nursing home days for Medicaid). The incremental cost of the demonstrations (e.g., case management and expanded waiver covered services) were then similarly expressed in terms of days of hospital or nursing home care valued at the independently derived estimate of the payor's average daily reimbursement for hospital or nursing home care. By dividing project impact and incremental costs by this average daily reimbursement, control for temporal and health care market differences among communities was obtained. A variance estimate was then derived for each component. The derivation of the variance estimate for each component (e.g., incremental costs and impact) are described in Appendix C. The difference between the incremental costs and the impact measure expressed in days is tested by use of Student's t and the strict criteria level of .05 significance. This difference is also the breakeven measure and its magnitude and direction are indicators of the success of the program in achieving cost-containment and objectives. Since power analyses for these tests in all cases revealed acceptably high statistical power, the probability value of the t-test when the t-ratio has a positive sign (indicating savings) can be interpreted as an accurate estimate of the likelihood of the project's incremental costs not exceeding its impact on traditional services in future replications of the given project approach. See Appendix C for a detailed discussion of the derivation of the standardized measure of program impact, including such issues as the derivation of variance and covariance estimates required for development of the measures, the treatment of case mix differences in those projects where they needed to be taken

and averaged monthly comparative group payments (M_C) for traditional services divided by $I_A: \frac{M_C - M_A}{I_A}$

f Breakeven measure (I_B) = difference between incremental costs and impact on traditional services; $I_T - I_D$

into account, and the sources for the standardizing estimate of average daily reimbursement rates by payor.

Table 6.21 provides for each project the standardizing factor, the impact on traditional services expressed as days of acute or nursing home care saved or added in comparison to the traditional system, the incremental costs of waived services and case management expressed as days of acute or nursing home care, the difference between these factors (that is the breakeven measure), the standard deviation of the breakeven measure, the t-ratio, and the probability level associated with the t-test. So, for example, in the case of New York City, the average Medicare reimbursement for the time frame under consideration for a hospital day was \$233. The incremental costs of the demonstration (e.g., case management and waived services) were about \$503 per client per month or, if expressed in terms of days of acute care, about what 2.16 days would have cost. Similarly, the average monthly difference between treatment and comparative groups in Medicare reimbursements was about \$13.79, with treatments having greater costs. This would also be about what .06 days of acute care would have cost Medicare. Note, however, that the sign of .06 is negative (-), indicating that the demonstration effort did not reduce traditional costs. The difference between these values or the amount that treatment group costs would have had to be reduced in order to break even, expressed in terms of Medicare-reimbursed nursing home days, is 2.22. Again, the sign is negative, because this is the amount that demonstration costs would have to be reduced before the project at least broke even -- the minimum criterion of success in cost containment. (A positive sign indicates successful cost savings equivalent to a reduction of that many days of acute care.) Given a relatively small standard deviation in this 2.22 measure for New York City, this translates into a t-value of 5.55. This means that the probability that these statistical findings of a 2.22 negative cost saving could have arisen by chance are less than one in 1,000 (i.e., the .001 probability level). There is almost no chance that the program could, in fact, result in treatment group total costs of care equivalent to those experienced in the existing system, based on the findings of the program data gathered in the evaluation.

Turning to the results of this analysis for each of the five projects, Table 6.21 suggests that two projects -- the New York City Home Care Project and the Long-Term Care Project of North San Diego County -- had little or no utilization control impact, relatively large incremental costs, and thus showed negative impacts overall for the demonstration that were statistically significant. These findings indicate that these two projects clearly did not succeed at cost containment. Use of traditional services would have to be reduced much more and/or the incremental costs of the demonstration (e.g., waived services and case management) cut before the project could break even in the future. The New York City and San Diego results must be viewed with some caution, however, because Medicaid impacts were not included in either case, and because the New York City findings are based on less than one year of data for largely noncomparable samples. It nevertheless appears unlikely that the general magnitude and direction of these findings would be altered by such adjustments and inclusions, given the relatively high costs of the waived services and case management packages and the low levels of nursing home use by participants.

Project OPEN presents a somewhat different situation. Here, some small Medicare savings associated with reduced hospitalizations were not as completely overshadowed by the incremental demonstration costs, due to a more restrained case management and waived service package. Thus, while the project has costs that exceed those experienced in the traditional system, the magnitude of these add-on costs are equal to less than half a day of acute care use a month. If there are reasons other than cost containment in desiring community-based long-term care (e.g., consumer preference), the extra costs incurred in Project OPEN to achieve that care are much less than the costs incurred to the government for the community-based long-term care being provided by the New York City and San Diego projects. The statistical findings are not as significant as one might ideally desire. There is a 25% probability that the statistical estimate of the breakeven measure (-.43) could be the result of random chance, and that the true value for I_B was zero, i.e., that the project would break even in a replication. The 75% probability that the findings are valid and that the project did not

break even, indicates again that, in order to achieve cost containment, the demonstration's incremental costs need to be further held down, or, more likely, that existing practices need to be improved (e.g., through better targeting) if reductions in utilization of traditional services are to be realized.

The results of the On Lok CCODA analysis indicate that -- unlike the previous three projects -- On Lok obtained more impressive reductions in traditional service use, and that these savings were not offset by the incremental demonstration costs. This resulted in net overall savings to Medicare, equivalent to about one-half day of hospital care. Moreover, statistical significance testing indicates that there is only a 25% chance that the findings may be invalid and that the project, in fact, only broke even. This 75% probability that the findings are valid is not as ideal as one might normally like for academically heralding the On Lok approach as a highly successful model for emulation -- in that case, 95% or even 99% probabilities are preferred -- but the finding is certainly encouraging to policymakers and program designers.

The On Lok analysis must still be viewed with extreme caution since it is based on self-reported utilization data and it is impossible to attribute costs to particular public and nonpublic payors. In this analysis, only acute care and nursing home care were treated as traditional services, while all other services were treated as waived. Given the capitation-like payment approach under which On Lok operated, this treatment of other services as waived, while a reasonable treatment, could be misleading. Since it was not possible to attribute service use to payors, the utilization and associated costs for waived services by treatment group members was compared with the estimated costs for similar services used by the comparative group to arrive at the incremental costs of the demonstration. Some, and perhaps many, of the services used by the comparative group would not have been paid for by Medicare. The services used by the comparative group may have been paid for by Title XX (which is generous in California) or even borne by the individuals and their families privately, but the degree to which this is true cannot be estimated. To the extent that a cost of a

service used by a comparative group participant was borne by Title XX, the finding of a reduction in such service use for the treatment group indicates there is still a valid savings for the public taxpayer, albeit not by Medicare. If the costs were borne by the clients and their families, a reduction in use of that service by the treatment group indicates a societal saving, but not a Medicare or governmental cost saving. More detailed and accurate data on service use would need to be available to sort out how much of the cost savings realized by On Lok were enjoyed by different payors.

Finally, the South Carolina results in Table 6.21 are the most positive. The program resulted in net overall savings to Medicare that were significant at the 10% level. That means that there is a 90% probability that the statistical estimate of the savings is valid.

These positive results are accompanied by Medicaid findings suggesting that the program costs were essentially identical to those produced in the existing system. Thus, while the project's incremental costs were equivalent to about three days of nursing home care, its utilization savings were about the same as a day and one-half of nursing home care. There were no net savings, but rather, add-on costs for community-based long-term care, that would have to be justified by benefits other than cost containment. Given the large variances in patterns of Medicaid use and associated payments, these add-on costs are not statistically significantly different from what is experienced in the existing system.

Savings in Medicare were achieved by a reduction in traditional service use through utilization controls akin to slightly more than half a day (.6) of acute care use -- a savings level about half that realized by On Lok, but still greater than the savings in Project OPEN (.4 days) and San Diego (.2 days). Since the project was a 1115 Medicaid waiver demonstration, there were no incremental costs to Medicare, and thus no offset at all to these utilization savings, resulting in a net overall savings (the .6 days) which is even greater than that realized by On Lok. Since the variance in Medicare payments overall was relatively low, this net savings approaches significance at the .10 level. In short, the statistical estimate concluding that there is a cost savings

(i.e., that the number estimated as +.6 is not, in truth, zero and that the project therefore more than broke even) has a 90% probability of being valid.

The positive findings of substantively and statistically significant Medicare savings and the finding of a negative but statistically nonsignificant Medicaid savings in South Carolina ultimately need to be merged in considering overall savings. The incremental demonstration costs borne by Medicaid in South Carolina produced both net Medicare savings and net add-on Medicaid costs. As Table 6.21 indicates, when combined savings in Medicare and Medicaid costs are contrasted to the incremental demonstration costs (borne by Medicaid), the South Carolina project shows a net overall saving, akin to a third of a day of hospital care or, alternatively, more than two days of nursing home care per client per month. The separate analyses of Medicare and Medicaid service utilization showing lower utilization for the demonstration clients (treatments) as compared to clients in traditional services, each met or approached .05 statistical significance. The addition of incremental costs to each analysis results in nonsignificant savings for Medicaid, but the overall pattern remains one of program success.

SUMMARY AND CONCLUSIONS

The results of the analyses of publicly-reimbursed utilization for the community-oriented coordinated long-term care demonstrations can be summarized with reference to their intervention designs and targeting goals.

From the perspective of intervention design, the results suggest the direct diversion of nursing home applicants through preadmission screening and expanded community service, represented by the South Carolina Community Long-Term Care Project, is associated with reductions in traditional service use that are not completely offset by incremental costs. For South Carolina, the breakeven situation is a highly positive result given the acute need in that state to slow the rate of growth in the use of nursing homes. While the program significantly reduced the use of nursing homes, it did not considerably alter patterns of Medicaid

costs, but in fact, might be associated over time with reduced Medicare costs. Promulgation of the project intervention on a statewide basis will in all likelihood represent an opportunity for the state to reduce the rate of growth in public expenditures by reducing the rate of nursing home utilization.

The On Lok consolidated model of long-term care, shown previously (in Chapter 5) to be one of the few associated with positive impacts on client functioning as a result of humanely delivered and intensive community-oriented services, also appeared to be achieving net overall cost savings as it applied the cost containment strategies of the health maintenance organization and similar competition-oriented reforms. On Lok clients were more likely to remain in the community than comparative group participants, and this was being achieved with cost savings in total public payments for long-term care, though less statistically significant than for the South Carolina project. The On Lok results of government cost savings must be viewed with some caution, however, because of the use of diary-reported data on utilization and the inability to accurately attribute service costs to public and nonpublic payors. In short, while results are encouraging, it cannot be concluded that the On Lok model has been demonstrated to be cost-effective.

Results were mixed for those projects representing the third type of intervention model which is designed to upgrade the home care package. This intervention model is represented by the San Diego Long-Term Care Project, New York City Home Care Project, and San Francisco's Project OPEN demonstration. Project OPEN did not produce public costs much higher than the existing system, but overall cost containment was not demonstrated. This project was able to somewhat control use of Medicare-reimbursed hospitalizations, but with an increase, though statistically nonsignificant, in public costs through use of waived services. There are indicators, however, that the findings for a replication of the Project OPEN model in another city could be positive. Project OPEN control group members were able without case management to access many of the waived services which were otherwise available in the service-rich San Francisco area. Thus, it appears that case management rather than waived services, based in a hospital-centered

consortium of providers, had the major effect of resulting in a near breakeven situation for this project. Future replications in a city with such rich service environments could focus more on case management and make less use of waived services, and thus perhaps achieve the same utilization savings with lower demonstration costs. In cities with less rich service environments, the comparative group would not have access on their own to the waived services, and thus perhaps the utilization savings that the waived services would achieve might prove much greater.

The two other projects with an intervention approach designed to upgrade the home care package showed overall public costs which were higher than in the existing system and statistically significant. In New York City, the high costs of the waived packages were not associated with reduced acute care or nursing home use. In San Diego, there were some utilization savings, but they were more than offset by the demonstration's incremental costs. It would thus appear that the control over medical and nursing home use associated with the intervention model designed to upgrade home care services was achieved to some extent by Project OPEN and San Diego, but not by New York City. Overall cost savings were not achieved by any of the three projects, although there are some reasons to hope for better results with a future replication of Project OPEN.

From the perspective of targeting goals (see Chapter 4), results appear relatively similar. South Carolina CLTCP and, perhaps, On Lok represent relatively successful interventions from the cost containment perspective. They sought clients from a variety of settings (either in the community or in an institution) with need for either community or institutional long-term care. Results from the New York City HCP experience would suggest that it is the relationships between the client and the system of care represented by the targeting goals (i.e., community versus institutional placement and services) of a project, as opposed to the level of functioning of client groups that determines cost-effectiveness. That is, the New York City project which targeted clients in the community with need for community services, obtained one of the most highly impaired samples, but these individuals made little

use of nursing homes. New York City HCP findings, like the San Diego LTCP findings, suggest that finding elders in the community with service needs, in some cases severe service needs, does not result in clear patterns of utilization control and associated cost savings, since these individuals are not at risk of institutionalization only because of their service needs. Interestingly, other factors become determinants of institutional care use and its control. The results from Project OPEN, which shared a similar targeting goal but had a far less impaired client group, make this analysis more complex. It would appear that the intervention approach of Project OPEN, and in fact, of the other two projects which targeted clients in the community with need for community services, can result in some service use reductions and cost savings for minimally impaired elders, if there is more emphasis on case management and less on waived service provision. It is possible that such individuals can be kept out of hospitals through better coordination of their care, and yet require less extensive packages of home care services than the more impaired individuals served by San Diego LTCP and New York City HCP.

In conclusion, the two community-oriented long-term care intervention approaches which offer the most promise for reducing or containing the cost of long-term care are: (1) the direct control of institutional admissions model which diverts (through preadmission screening) clients applying or about to apply for institutional placements to alternative community settings; and (2) the consolidated service delivery model which (based upon an expanded HMO model) attempts to achieve program economy through direct control within a single agency of both institutional and community-based care. A third intervention approach -- upgrading the home care package -- offers less promise, but may be able to achieve cost-containment goals if the primary focus of the project is one of case management with judicious use of the waived services that expand home care services.

NOTES

¹See Chapters 3 and 4 for presentation of the evaluation's findings on project intervention approaches and targeting strategies.

²The potential impacts of the program on the number of persons using any publicly-supported health care services (e.g., whether the projects encourage increased use by persons formerly maintained through informal systems) are not addressed here, since the focus is on per capita utilization and reimbursement impacts. See Chapters 4 and 7 for discussion of this issue.

³See Berkeley Planning Associates, Preliminary Report on Work in Progress," (1982) for additional discussion of the breakeven approach.

VII. INFORMAL CARE OUTCOMES IN COMMUNITY-BASED LONG-TERM CARE:
REPLACEMENT OR SUPPLEMENTATION?

INTRODUCTION

Gerontologists have historically emphasized the importance of "informal caregivers"¹ to long-term care. Informal support systems are the predominant source of assistance for disabled adults and a principal factor enabling their continued community residence. As such, they will be the foundation upon which cost-effective community long-term care interventions are built. Until recently, however, their significance to Medicare and Medicaid has not been explored.

The most pressing questions about informal support system functioning are those for which the least is known. Relatively little research has been devoted to the longitudinal behavior of disabled elderly and their informal systems. As a consequence, there is a great deal of uncertainty about the effects of new public long-term care programs upon existing informal care. In this evaluation, two important questions are addressed: "Did the projects alter the informal system behavior of their clients? Was informal assistance eroded, maintained, or increased?"

This chapter reports analyses on three of the HCFA demonstration projects' impacts upon participants' receipt of informal care over a 12-month period.² After a discussion of background issues, the analytic approach and outcome measures are summarized. The findings for each project are then presented, followed by a conclusion. The projects include two Medicare demonstrations designated as primary evaluation sites: the Long-Term Care Project of North San Diego County and the New York City Home Care Project. The third project, the South Carolina Community Long-Term Care Project, is a Medicaid demonstration where detailed information was available on participants' informal systems.

Since the extant gerontological research may be unfamiliar to many in the health services research community, Appendix E, "Research on

Informal Support Systems," was developed. After summarizing the existing knowledge about informal systems useful for understanding community long-term care program performance, this appendix discusses findings to date about the relationship between formal community long-term care services and informal caregiving. Appendix E also provides additional information on informal supports by means of an in-depth analysis of the San Diego LTCP impacts on informal care outcomes.

BACKGROUND

In considering the addition of community long-term care benefits to Medicare and Medicaid, policymakers have debated the significance of substitution effects. The primary concern has been that the introduction of formal services will erode the informal care received by the disabled elderly (Congressional Budget Office, 1977; Health Care Financing Administration, 1981; Morris, 1981; Pollak, 1977 and 1980; Rice and Waldman, 1976; and Steiner and Needleman, 1981). The substitution effect has become a critical issue since the late 1970s; it has been linked with the ability of public long-term care programs to realize cost containment or cost reduction objectives (General Accounting Office, 1982; Health Care Financing Administration, 1981). The origin of the substitution concept is also examined in Appendix E.

There has been considerable debate over whether reduction in informal services is appropriately labeled "substitution." There are two competing perspectives which reflect different beliefs about the reduction's cause, desirability, contribution to client outcome, and, consequently, the most effective strategy for long-term care interventions.

In the "replacement" position, informal care reduction is interpreted as simple replacement, substitution in its true sense (Greene, 1983). The assumption is that formal services will come to replace informal assistance over time. Any degree of informal assistance reduction in the presence of formal services is undesirable as it reflects a shift of private responsibilities to publicly-funded services. In this view, the most cost-effective use of community services is to fill

existing gaps in informal care. The objective is to provide additional services to individuals in tasks where existing care is insufficient or unavailable, while ensuring against replacement.

The second position may be termed "supplementation." In this case, community services are directed to achieving a broader objective of maintaining a viable family (or surrogate) caregiving unit. Services have a reciprocal or joint relationship with informal care in order to achieve a homeostatic living situation. This reflects a consensus that, to the extent formal services are structured to facilitate or complement caregiving, informal systems will function for longer periods and institutionalization will be delayed. In this case, a certain degree of replacement of informal assistance with formal services is desirable. It relieves dysfunctional pressures upon the caregivers which, in the absence of intervention, would increase the probability of premature nursing home admissions. Gerontologists assert that informal system maintenance must be the principal objective of community-based long-term care programs if they are to be effective in preventing institutionalization (Brody, 1978; Frankfather, Smith and Caro, 1981).

Empirical investigation of replacement and supplementation effects has been limited. There has not been an adequate treatment of informal care impacts of Medicaid 1115- and Medicare 222-type demonstrations of community long-term care systems. To date, only two studies related to informal supports have been performed on the types of clients targeted by the HCFA demonstrations. The California Multipurpose Senior Services Project (MSSP), in a cross-sectional analyses of its initial assessment data, found a small degree of replacement of informal assistance by formal services (Smith, Talbott and Miller, 1982). Another study of aged clients of an Arizona home care/case management agency found significant levels of replacement (Greene, 1983). Generally, however, there is little convincing evidence about the erosion of informal care through replacement effects or conversely, informal support system maintenance via supplementation tactics.

In this study, interpretations of informal care decline and formal service increase are subject to several important limitations. These limitations are imposed by the nature of the community long-term care

project-client relationship and the lack of primary data tracing this relationship. The evaluation's short observation period relative to the expected course of client outcomes is also a consideration.

The client-project relationship is a critical focus for evaluating supplementation-replacement effects. Most demonstration projects expect to achieve goals of continued community residence through informal system maintenance. This maintenance is often achieved through supplementation tactics, which essentially seek to establish a reciprocal relationship between formal services and informal care. In this context, with the existing data it is difficult to distinguish moderate levels of replacement from controlled supplementation. Furthermore, it is important to note that there are some uses of formal services in the supplementation framework that are not necessarily accompanied by an overall decline in informal care.³

Without information on care plan objectives, it is impossible to establish whether caregivers were partners in supplementation relationships, and for whom these tactics were successful. Unfortunately, for this evaluation, data were not available for analysis on care plan objectives. In addition, an argument can also be made that regardless of treatment/comparative group differences in rates of nursing home placement, the 12-month periods of observation in this study are too brief to measure whether informal support systems of demonstration clients are being maintained for longer periods than for comparative group participants. Many gerontologists believe that supplementation is a long-term process. It is also likely that successful supplementation outcomes depend upon the point in the client's long-term care career (i.e., community or nursing home placement) at which informal support system interventions are made.

In this evaluation, the principal concern is the demonstrations' impacts upon informal support system behavior over a 12-month period of time. The evaluation treats the project (assessment, case management and services) as the unit of intervention for a given population. As such the precise cause of observed effects (i.e., the project as a whole, its case management or specific services provided to clients) cannot be isolated. Rather, the evaluation defines substitution as the

erosion of informal assistance of treatment group participants relative to comparative group participants over a 12-month period and quantifies it in terms of a reduction in informal assistance and an increase in "unmet" need. As previously illustrated, the distinction between replacement and supplementation can be difficult to make in many cases.

ANALYTIC APPROACH, DATA SOURCES, AND VARIABLES

The informal care analyses employ the general analytic approaches and data sets, as well as many of the same independent variables, described in Chapter 5. All data were collected via the projects' assessment and reassessment processes. Informal care outcomes are operationalized in terms of unmet needs (residual formal service need after informal system participation is accounted for) and informal care frequency measures.

The general analytic approach employed to evaluate treatment/comparative group differences was analysis of covariance conducted in the form of stepwise ordinary least squares multiple regression. The dependent variables were four outcome measures at 12 months: unmet Activities of Daily Living, unmet Instrumental Activities of Daily Living, informal ADL assistance and informal IADL assistance. Due to variations in the type of data available at each of the projects, in San Diego, assistance was measured as individual episodes of caregiving, in New York City as days per week of caregiving and in South Carolina, as days per month of caregiving. Analysis of covariance summary tables are presented for all outcome measures for each project. Detailed tables are only presented where significant group effects exist.

Independent variables were entered in sets. The covariates included: the value of the respective dependent variable at baseline (entered first); other variables on which the treatment and comparative groups differed at baseline in order to adjust for case-mix differences that could be related to outcomes (entered second); demonstration effects, a dummy variable indicating treatment versus comparative group membership (entered third); and interaction terms (entered last). The interaction terms were entered to ascertain whether the demonstration

"treatment" had differential impacts on subgroups of clients (defined by levels of the covariates). Significant interactions indicated the presence of such differences and the necessity of decomposing project samples into subgroups that were homogeneous with respect to treatment effects. The subgroups were defined by covariate combinations. In New York City, three of the four analyses employ such subgroups, defined by levels of the respective covariates. In San Diego case-mix differences were so severe that homogeneous subgroups could not be developed for the analysis.

The unmet Activities of Daily Living and unmet Instrumental Activities of Daily Living scales which were developed for all projects, operationalize residual formal service needs. These measures were inspired by the work of Branch and Jette (Branch and Jette, 1981). The scales were developed under the rationale that measures of functional states (such as dependency in a particular activity or an ADL score) reflect "raw" disability. In the context of the Medicaid 1115 and Medicare 222 demonstrations, functional status measures are almost meaningless as formal service need indicators without taking into account the individual's informal support system. The demonstrations do not prescribe services on the basis of disability, but upon "residual", or unmet needs for assistance: those needs that remain after considering the presence of informal caregivers. Comparisons of unmet needs with raw needs provide a clearer picture of formal service needs and also serve as indicators of the role and magnitude of informal support systems.

Unmet need scales proceed from the assumption that "needs" for assistance are present when a participant has dependencies. The scales are developed in two steps. First, the unmet status of each dependency is determined. A dependency is unmet if two conditions are satisfied: no informal caregivers are recorded (regardless of the presence of paid help or formal service providers), or an informal caregiver and formal service provider are simultaneously present. In the latter case, the need is unmet because the informal caregiver does not meet 100% of the dependent older person's need for assistance. Second, the actual unmet ADL and unmet IADL scales are created by summing the number of unmet

dependencies. In all projects the unmet ADL and unmet IADL scales were found to have high levels of internal consistency. High interrater reliability was demonstrated in a study conducted by BPA at the San Diego Project.⁴

An individual's unmet ADL or unmet IADL score can be interpreted as the total number of ADL or IADL dependencies that are not completely served by the informal system at the time of observation. An unmet need scale may be alternatively considered as the number of dependencies where residual need exists and some form of assistance must be developed. The unmet ADL composition differs slightly across projects.

Informal caregiving quantities are measured in units of discrete episodes of assistance for San Diego, days of assistance per week in New York and days per month of informal care for South Carolina. The limitations of episodes and days of care as measures of informal assistance is an important consideration in interpreting the study findings.⁵

San Diego's assistance episodes are true continuous variables as they are aggregates of frequencies originally collected for individual dependencies. The episodes principally reflect the efforts of one primary caregiver. Instances of two primary caregivers assisting in one activity were rare. The ADL episodes measure is the sum of the four ADL activities (bathing, feeding, dressing and toileting). The IADL episodes variable reflects five activities (shopping, meal preparation, light housekeeping, transportation and money management).

In New York City, days of assistance per week measures are additive indices. The original categories were ratio-level ranges; they were reformed into relatively uniform intervals and coded as continuous (in a 0-5 range). These intervals sum the efforts of up to two primary caregivers. As in San Diego, two caregiver activities were rare occurrences. The intervals represented by the indices are noted in the tables presenting the analysis results. As additive indices, the data can be treated as continuous variables. However, the intervals represented by the index values should be considered whenever the findings are interpreted. The ADL assistance variable reflects five activities (bathing, feeding, dressing, toileting and transferring); the IADL

assistance variable reflects four activities (meal preparation, light housekeeping, transportation and medications administration).

South Carolina's days per month of informal care measure was developed by a similar approach, except that the original categories were weighted to indicate the mean value in days per month (rather than episodes) represented by the interval. These means were then summed across caregivers (up to four are possible) prior to coding as an index. Three IADL activities (shopping, meal preparation and housekeeping) are included. In this project, the days of care measure reflects only those participant dependencies that are 100% informally met; it does not include frequency of activities which are only partially met by the informal system.

Participant Samples

The informal care analysis samples are smaller than those employed in the participant outcomes analysis (see Appendix A). This is principally due to the exclusion of cases with missing data and the smaller initial samples for which informal care data were collected.

In San Diego and South Carolina, informal care items were added to assessment instruments several months after intake initiation. Small differences are also created by the exclusion of participants in unusual living arrangements (such as residential care facilities, boarding homes, rented rooms, hotels and congregate housing projects). These individuals were excluded because their informal caregiving experiences would differ significantly from the typical participant household.

Actual sample sizes are presented in the relevant tables. Sample attrition did not introduce significant group differences and each project's informal care sample mirrors the composition and characteristics of the larger project samples discussed in Appendix A.

INFORMAL CARE OUTCOMES: SOUTH CAROLINA COMMUNITY LONG-TERM CARE PROJECT

The South Carolina CLTCP Preadmission Screening Program served highly-impaired individuals with relatively high rates of hospital and nursing home use. Waivered services were infrequent in care plans. The

project's impacts on informal caregiving may be interpreted as supplementation and task specialization. That is, it reduced the number of types of dependencies for which care was provided by informal caregivers, but it did not significantly erode levels of informal assistance.

Tables 7.1 and 7.2 summarize the relevant analysis of covariance findings. All covariance analyses controlled for treatment/comparative group case mix differences at baseline. The differences included life stressors (major life changes with potential negative impact, such as divorce or death of spouse), and assessor-judged client and caregiver community/nursing home residential preference. These variables are described more completely in the individual project analyses found in Appendix A. No subgroup analysis was required for any of the four outcomes.

As summarized in Tables 7.1 and 7.2, the South Carolina CLTCP's clients experienced significant increases in unmet ADL and IADL needs. The difference in the treatment and comparative groups' change in unmet needs indicates that, on the average, caregivers of CLTCP clients withdrew from activities where they had previously provided assistance. Project clients experienced increases of .7 of an unmet ADL need (of a total of four) and .3 of an unmet IADL need (of a total of three), relative to comparative group participants over the 12-month period. As shown in the detailed analyses presented in Appendix E, caregiver preference for home residence was significant in the reduction of unmet ADL needs and was associated with a .2 of an unmet need decrease over the year. The reverse occurred with respect to unmet IADL needs, where the participant's preference proved significant and accounted for .4 of an unmet need reduction. These findings may be reflective of differential abilities of participants to marshal additional ADL and IADL assistance from primary caregivers. Primary ADL caregivers are often spouses, who may have been willing or able to meet additional personal care needs within the home (the adequacy of these efforts is not known) but unable to provide additional instrumental assistance due to their own functional limitations.

Table 7.1
Change in Unmet ADL and IADL Needs
for South Carolina Participants:
Summary Statistics from Analysis of Covariance
Testing for Treatment-Comparative Group Differences

	Unmet ADL ^a	Unmet IADL ^b
Demonstration Effect ^c Beta	-.205***	-.124*
Demonstration Effect Unstandardized Regression Coefficient (b)	-.679***	-.338*
Standard Error of b	.184	.155
F Value for the Model	9.107***	7.132***
N	295	286

^aUnmet ADL is based on the number of days per month of inadequate care in bathing, dressing, toileting, and feeding.

^bUnmet IADL is based on the number of days of per month of inadequate care in shopping, meal preparation, and housekeeping.

^cDemonstration Effect is coded as: 0 = Treatment Group; 1 = Comparative Group

* $p < .05$
 *** $p < .001$

Table 7.2
Change in Informal Care for South Carolina Participants:
Summary Statistics from Analysis of Covariance
Testing for Treatment-Comparative Group Differences

	Days per ^a Month of ADL Care	Days per ^b Month of IADL Care
Demonstration Effect ^c Beta	.015	.014
Demonstration Effect Unstandardized Regression Coefficient (b)	1.634	1.237
Standard Error of b	6.070	4.898
F Value for the Model	15.249***	12.657***
N	278	271

^aADL care is based on the number of days per month of adequate informal care in bathing, dressing, toileting, and feeding.

^bIADL care is based on the number of days per month of adequate informal care in shopping, meal preparation, and housekeeping.

^cDemonstration Effect is coded as: 0 = Treatment Group; 1 = Comparative Group

***p \leq .001

The unmet need findings do not indicate informal care erosion per se because unmet need increases were not accompanied by parallel declines in the level of informal assistance provided. In contrast, the analyses summarized in Table 7.2 show a slight increase in the level of informal assistance, as measured in units of days of informal care per month. While this measure is, at best, only an approximation of informal caregiving activity, the findings indicate that South Carolina's CLTCP clients did not exhibit reductions in the frequency of informal care provided relative to comparative group participants. This may be the result of the project's approach to case management which incorporated a strong emphasis on actively organizing informal resources prior to formal service prescription.

INFORMAL CARE OUTCOMES: LONG-TERM CARE PROJECT OF
NORTH SAN DIEGO COUNTY

The San Diego LTCP served a moderately-impaired target group of community-residing elders with low probability of nursing home placement and relatively high hospitalization rates. Almost all clients received fairly expensive waived service packages which generally included homemaker and home health aides and health education. The analyses suggest that the project did not stimulate its clients' informal care. During the 12-month observation period, a trend toward increased unmet personal care (ADL) needs emerged, although levels of assistance did not decline significantly. There was significant erosion in both IADL needs met by informal caregivers and quantities of assistance.

Tables 7.3 and 7.4 present a summary of the analysis of covariance findings for the LTCP. Tables detailing the analyses where a significant group effect was found are presented in Appendix E. All covariance analyses controlled for treatment/comparative group baseline case mix differences. These differences included: mental status (cognitive impairment), household status (alone or with others), social resources, and a component of morale measurement (life satisfaction).

The principal erosion of project client assistance was in IADL. Strong erosion effects were seen in instrumental needs served by infor-

Table 7.3
Change in Unmet ADL and IADL Needs
of San Diego Participants:
Summary Statistics from Analysis of Covariance
Testing for Treatment-Comparative Group Differences

	Unmet ADL ^a	Unmet IADL ^b
Demonstration Effect ^c Beta	-.090*	-.349***
Demonstration Effect Unstandardized Regression Coefficient (b)	-.201*	-.1.035***
Standard Error of b	.102	.148
F Value for the Model	31.580***	53.462***
N	332	332

^aUnmet ADL is based on the number of days per month of inadequate care in bathing, dressing, toileting, and feeding.

^bUnmet IADL is based on the number of days per month of inadequate care in shopping, meal preparation, and housekeeping.

^cDemonstration Effect is coded as: 0 = Treatment Group; 1 = Comparative Group

*p < .05

***p < .001

Table 7.4
Change in Informal ADL and IADL Assistance for San Diego Participants:
Summary Statistics from Analysis of Covariance
Testing for Treatment-Comparative Group Differences

	Number of Episodes per Week of ADL Care ^a	Number of Episodes per Week of IADL Care ^b
Demonstration Effect ^c Beta	.032	.808**
Demonstration Effect Unstan- dardized Regression Coefficient (b)	.718	2.569**
Standard Error of b	.889	.127
F Value for the Model	50.610***	54.668***
N	332	332

^aADL care is based on the number of episodes of informal care in bathing, dressing, toileting, and feeding during the previous week.

^bIADL care is based on the number of episodes of informal care in shopping, meal preparation, housekeeping, transportation, money management, and medications during the previous week.

^cDemonstration Effect is coded as: 0 = Treatment Group; 1 = Comparative Group

**p < .01
 ***p < .001

mal caregivers (as measured by the unmet IADL scale) and quantities of assistance provided (IADL assistance episodes). Treatment group caregivers reduced their assistance by an average of .85 of an activity relative to comparative group caregivers at six months (six-month analyses are presented in Appendix E), rising to one full activity (of a total of six IADL activities) at year's end. The increase in unmet IADL cannot be attributed to task specialization effects because quantities of IADL assistance were also significantly reduced. The treatment group experienced a 2.1 episode/week reduction in IADL assistance at six months, increasing to a 2.6 episodes/week reduction at one year. Reductions occurred principally in housekeeping and meal preparation tasks.

The LTCP's impacts upon ADL care are not as definite. The effects for unmet ADL needs are unclear, although there is no evidence for erosion of assistance. A small erosion of needs served by informal caregivers was manifested as .2 of an unmet need increase (of a total of four) at 12 months. The role of differences in treatment/comparative group composition could not be determined because confounding interactions could not be successfully decomposed (see Appendix E). It appears that participants with higher levels of cognitive impairments and fewer social resources were the most vulnerable to unmet need increases. The findings on ADL assistance were more clear: relative to the comparative group participants, LTCP clients did not experience reductions in ADL assistance by caregivers (Table 7.4).

These findings were confirmed in a more detailed investigation, discussed in Appendix E, which found little evidence for sustained or increased informal caregiving in ADL. The treatment group did exhibit higher levels of created supplementation for specific activities, but there was no statistically significant ADL supplementation on the ADL scale.

INFORMAL CARE OUTCOMES: NEW YORK CITY HOME CARE PROJECT

The New York City Home Care Project served a highly-impaired but relatively stable target group which had virtually no nursing home utilization and only moderate acute hospital utilization. Almost all

clients received a waived service package including homemaker/chore and personal care services. The Home Care Project's impact on informal systems varied with client characteristics. Unmet service needs increased for all clients in both ADL and IADL, but this trend was more pronounced for certain subgroups. In addition, ADL assistance from informal caregivers eroded for all clients during the period. With respect to IADL, informal assistance for poorly functioning clients declined slightly, while informal assistance for better functioning clients actually increased.

Tables 7.5 to 7.7 summarize the covariance analysis results. Tables 7.8 to 7.11 detail analyses where significant group effects were found. These analyses control for treatment/comparative group case-mix differences at baseline. These differences include: functional status at baseline (number of ADL dependencies); living arrangements (alone or with others); race (White/non-White) in unmet ADL and IADL analyses only; and MSQ score.

As the tables indicate, the project had differential impacts upon participants. These differences were originally manifested by interactions between covariates and the demonstration effect variable which reflects treatment or comparative group membership. This necessitated decomposition of the participant sample into subgroups defined by covariate combinations. These subgroups are homogeneous with respect to treatment effect. Subgroup analysis was required for unmet ADL, unmet IADL, and IADL assistance outcomes. In unmet ADL, four subgroups were defined by combinations of living arrangement and high/low ADL functional status at baseline. In unmet IADL, the four subgroups were developed for living arrangement and high/low baseline unmet IADL score combinations. The IADL assistance analysis required two subgroups based upon high/low ADL functional status at baseline.

Informal ADL care was negatively affected by the project. Unmet ADL needs increased slightly for clients living alone and those with high ADL functioning (zero to two dependencies) who were living with others (Table 7.5). Significant negative effects were manifested for low functional status clients living with others, indicating erosion of caregiver participation. This subgroup of treatment clients

Table 7.5

Change in Unmet ADL Needs of New York City Participants:

Summary Statistics from Analysis of Covariance

Testing for Treatment-Comparative Group Differences

	Lives Alone		Lives with Others ^a	
	Low ADL ^b Functional Status	High ADL ^c Functional Status	Low ADL ^b Functional Status	High ADL ^c Functional Status
Demonstration Effect ^d Beta	-.001	-.288	-.571***	-.134
Demonstration Effect Unstandardized Regression Coefficient (b)	-.004	-.698	-2.687***	-.389
Standard Error of b	.484	.268	.394	.349
F Value for the Model	.057	2.329	12.915***	4.743
N	61	79	103	68

^aLives with Others is defined as one or more other household residents.

^bParticipants with low ADL functioning have three to five dependencies.

^cParticipants with high ADL functioning have zero to two dependencies

^dDemonstration Effect is coded as: 0 = Treatment Group; 1 = Comparative Group

***p \leq .001

Table 7.6
Change in Unmet IADL Needs of New York City Participants:
Summary Statistics from Analysis of Covariance
Testing for Treatment-Comparative Group Differences

	Lives Alone		Lives with Others ^a	
	Low Unmet IADL Needs ^b (Baseline)	High Unmet IADL Needs ^c (Baseline)	Low Unmet IADL Needs (Baseline)	High Unmet IADL Needs (Baseline)
Demonstration Effect ^d Beta	-.135	-.101	-.240*	-.032
Demonstration Effect Unstandardized Regression Coefficient (b)	-.282	-.441	-.717*	-.071
Standard Error of b	.321	.398	.298	.414
F Value for the Model	1.127	.535	4.53**	.212
N	54	41	96	37

^aLives with Others is defined as one or more other household residents.

^bParticipants with low unmet IADL needs have zero to two unmet needs.

^cParticipants with high unmet IADL needs have three to five unmet needs.

^dDemonstration Effect is coded as: 0 = Treatment Group; 1 = Comparative Group

*p < .05

**p < .01

Table 7.7
Change in Informal ADL and IADL Assistance
for New York City Participants:
Summary Statistics from Analysis of Covariance
Testing for Treatment-Comparative Group Differences

	ADL Assistance (Days/Week) ^a	IADL Assistance (Days/Week) ^a	
		Low ADL Functioning ^b	High ADL Functioning ^b
Demonstration Effect ^c Beta	-.118**	-.049	+.184**
Demonstration Effect Unstan- dardized Regression Coefficient (b)	-.905**	-.485	+1.219**
Standard Error of b	.327	.604	.455
F Value for the Model	38.621***	14.997***	13.463***
N	382	210	170

^a Days per week of informal assistance is measured with an additive scale (0 - 5 range):

- 5 = six to seven days per week
- 4 = four to five days per week
- 3 = two to three days per week
- 2 = one day per week
- 1 = less than once per week
- 0 = no assistance

^b Participants with low ADL functioning have three to five dependences at intake. Participants with high ADL functioning have zero to two dependencies.

^c Demonstration Effect is coded as: 0 = Treatment Group; 1 = Comparative Group

**p < .01

***p < .001

Table 7.8
 Change in Unmet ADL Needs among New York City Participants Over Time:
 Analysis of Covariance using Hierarchical Multiple Regression
 to Control for Baseline Differences in Treatment and Comparative Groups

Dependent Variable	Variable Sets Added ^c	Beta	Change in R ²	F Value of Change
Unmet ADL Needs at 12-Month Reassessment:	1) Covariates			
	Unmet ADL Needs - Initial Score	.131	.034	1.166
	Race	-.101		
Participants Living with Others, ^a Low Functional Status ^b	MSQ - Initial Score	.187*		
	2) Demonstration Effect	-.571***	.311	44.552***
(N = 103)				

^aLiving with others is defined as one or more other household residents.

^bParticipants with low ADL functioning have three to five dependencies.

^cVariable definitions and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group

Unmet ADL Needs: 0 - 5 = No unmet needs to five unmet needs

Race: 0 = White; 1 = Nonwhite

MSQ: 0 - 10 = No impairment to severe impairment

*p < .05

***p < .001

Table 7.9
 Change in Unmet IADL Needs among New York City Participants Over Time:
 Analysis of Covariance using Hierarchical Multiple Regression
 to Control for Baseline Differences in Treatment and Comparative Groups

Dependent Variable	Variable Sets Added ^c	Beta	Change in R ²	F Value of Change
Unmet IADL Needs at 12-Month Reassessment: Participants Living with Others; Low Unmet Needs (N = 96)	1) Covariates Race MSQ - Initial Score ADL - Initial Score	.220 -.090 -.101	.113	3.912*
	2) Demonstration Effect	-.240	.053	5.786*

^aLiving with others is defined as one or more other household residents.

^bLow unmet needs is defined as participants who have zero to two unmet IADL needs.

^cVariable definitions and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group
 Race: 0 = White; 1 = Nonwhite
 MSQ: 0 - 10 = No impairment to severe impairment
 ADL: 0 - 5 = No impairment to severe impairment

*p ≤ .05

Table 7.10
Change in ADL Assistance among New York City Participants Over Time:
Analysis of Covariance using Hierarchical Multiple Regression
to Control for Baseline Differences in Treatment and Comparative Groups

Dependent Variable	Variable Sets Added ^b	Beta	Change in R ²	F Value of Change
Days per Week of ADL Assistance ^a at 12-Month Reassessment (N = 382)	1) Covariates			
	Days of ADL Assistance at Intake	.310***	.369	44.027***
	ADL - Initial Score	.270***		
	Living Arrangement	.111*		
	MSQ - Initial Score	.083		
	Race	-.003		
	2) Demonstration Effect	-.118**	.013	7.679**

^aDays per week of informal assistance is measured with an additive scale (0 - 5 range):
 5 = six to seven days per week; 4 = four to five days per week; 3 = two to three days per week;
 2 = one day per week; 1 = less than once per week; 0 = no assistance

^bVariable definitions and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group

ADL: 0 - 5 = No impairment to severe impairment

Living Arrangement: 0 = Alone; 1 = With one or more others

MSQ: 0 - 10 = No impairment to severe impairment

Race: 0 = White; 1 = Nonwhite

*p < .05

**p < .01

***p < .001

Table 7.11
 Change in IADL Assistance among New York City Participants Over Time:
 Analysis of Covariance using Hierarchical Multiple Regression
 to Control for Baseline Differences in Treatment and Comparative Groups

Dependent Variable	Variable Sets Added ^c	Beta	Change in R ²	F Value of Change
Days per Week of IADL Assistance at 12-Month Reassessment:	1) Covariates			
	Days of IADL Assistance at Intake	.335***	.213	14.996***
	Living Arrangement	.153*		
	MSQ - Initial Score	.210**		
High Functional Status ^b Participants	2) Demonstration Effect	.184**	.033	7.185***
(N = 170)				

^aDays per week of informal assistance is measured with an additive scale (0 - 5 range):

5 = six to seven days per week; 4 = four to five days per week; 3 = two to three days per week;

2 = one day per week; 1 = less than once per week; 0 = no assistance

^bParticipants have zero to two ADL dependencies (of a total of five).

^cVariable definitions and range:

Demonstration Effect: 0 = Treatment Group; 1 = Comparative Group

Living Arrangement: 0 = Alone; 1 = With one or more others

MSQ: 0 - 10 = No impairment to severe impairment

*p < .05

**p < .01

***p < .001

experienced a 2.7 unmet need increase (of a total of five) relative to comparative group participants over the 12-month period (Table 7.8). The ADL assistance analyses (Table 7.10) suggest that, for all clients, on average, frequency of assistance was reduced. There was an erosion of caregiver ADL assistance by almost one full frequency scale increment for all participants.

The New York project's IADL impacts also varied with client characteristics. Four subgroups were formed, defined by combinations of living arrangement and high/low unmet needs at baseline. Three of the four subgroups exhibited only a slight increase in unmet IADL needs during the year; clients living alone experienced no significant change in unmet IADL needs, regardless of their unmet need status at baseline. Among those living with others, elders with more assistance from informal caregivers (low unmet needs at baseline) experienced erosion of .7 of an activity during the year. This erosion is important because this group only had a maximum of two unmet needs at baseline. In contrast, level of informal care was unaffected for clients with high levels of unmet need at baseline. This difference may reflect the discovery of "need" due to marginal spouse caregivers among the low unmet IADL group. These spouses may have been assisting to the best of their capabilities. Since the spouses may have been functionally limited themselves, the project's clients may not have been receiving adequate informal care. After the baseline/initial assessment, the presence of a marginally functional spouse caregiver in the absence of formal services would have been judged as inadequate by the New York project's case managers. Over the year, case manager supplementation and task specialization tactics (using homemaker services) might account for the differential erosion effects. The task specialization hypothesis is supported by the analysis presented in Table 7.11, which indicates the project's enhancement of the frequency of informal assistance among better-functioning clients (individuals with high ADL functioning at baseline). For the treatment group, this subgroup of participants exhibited a significant increase in informal assistance over the comparative group participants during the year.

SUMMARY AND CONCLUSION

Table 7.12 summarizes the relative impact of the demonstration projects on unmet service needs and informal assistance. In the San Diego project, the treatment group experienced a trend toward increased unmet ADL needs, but levels of informal assistance in ADL tasks also increased slightly. In contrast, unmet IADL needs increased substantially and this trend was coupled with a large decrease in informal assistance with IADL tasks.

In New York City, the findings were somewhat different. The project's impact on informal supports varied with client characteristics. Treatment group participants experienced an increase in unmet service needs in both ADL and IADL tasks. Not surprisingly, this trend was most pronounced for clients with low functional status at intake. With respect to informal assistance, there was a decline in ADL informal caregiving and a slight increase in IADL informal caregiving. Of particular interest was the differential impact on IADL informal assistance among client subgroups. Informal assistance in IADL decreased for clients who had low ADL functioning at baseline, but assistance increased for clients who had high ADL functioning at baseline. The increase in IADL informal assistance for clients with high ADL functioning may reflect task specialization, i.e., the informal system providing more professional services such as shopping and transportation, while the formal system provides more specialized personal care services when needed.

For the South Carolina project, the informal support findings were the most encouraging. Clients experienced an increase in both unmet ADL and unmet IADL needs. However, these findings did not indicate informal care erosion, because there was no decline in the level of informal assistance provided in either ADL or IADL tasks.

The evaluation's findings demonstrate the critical nature of project intervention strategy, target group choice, and case management practice with respect to informal system outcomes. The role of these factors emerges when comparisons are made among seemingly disparate demonstrations.

Table 7.12
Relative Impact of the Demonstration Projects
on Unmet Service Needs and Informal Assistance^a

Outcome Measure	San Diego Beta	New York City Beta	South Carolina Beta
<u>Unmet Service Needs - ADL</u>	-.090	-.298	-.205
Subgroup:			
(1) Lives alone, low ADL functioning	N/R ^b	-.001	N/R
(2) Lives alone, high ADL functioning	N/R	-.288	N/R
(3) Lives with others, low ADL functioning	N/R	-.571	N/R
(4) Lives with others, high ADL functioning	N/R	-.134	N/R
<u>Unmet Service Needs - IADL</u>	-.349	-.210	-.124
Subgroup:			
(1) Lives alone, low ADL functioning	N/R	-.135	N/R
(2) Lives alone, high ADL functioning	N/R	-.101	N/R
(3) Lives with others, low ADL functioning	N/R	-.240	N/R
(4) Lives with others, high ADL functioning	N/R	-.032	N/R
<u>Informal Assistance</u>			
ADL	+.032	-.118	+.015
IADL	-.808	.071	+.014
Subgroup:			
(1) Low ADL functioning	N/R	-.049	N/R
(2) High ADL functioning	N/R	+.184	N/R

^aThe standardized regression coefficient is reported, which indicates the direction and magnitude of project impacts. "+" indicates the demonstration project had a more positive impact than the traditional long-term care system (i.e., decreased unmet service needs and increased informal assistance). "-" indicates the demonstration project had a less positive impact than the traditional long-term care system (i.e., increased unmet service needs and decreased informal assistance).

^bN/R indicates that subgroup analysis was not required.

The San Diego LTCP and the New York City HCP represent similar intervention strategies but different target groups. The San Diego project's informal care outcomes represent essentially replacement in IADL care and maintenance in ADL. The New York City project's outcomes may be characterized as either maintenance or stimulation of IADL assistance through supplementation, dependent upon subgroup. In general, its ADL assistance may be interpreted as moderate decline consistent with supplementation tactics for most clients and strong erosion for one less functionally impaired subgroup. The latter situation may reflect lack of emphasis on informal system building by case managers.

The intervention strategy of the San Diego and New York City projects was to upgrade the home care package by providing expanded services through a single organization responsible for all necessary community services. The San Diego project operated in a relatively service-rich environment where coordination and service gaps were perceived as the major problems. The New York City Home Care Project's founders perceived their environment in similar terms except that services were not affordable by their target group (non-Medicaid, near-poor Medicare enrollees). As Medicare demonstrations, both projects focused on the reduction of unnecessary hospitalization while experimenting with Medicare program reforms that reflected the needs of the current aging population (i.e., incorporating a broader concept of need associated with chronic illness). It appears that such an intervention strategy is not oriented toward assertive informal system capacity-building.

These projects' target groups were quite different. San Diego's target group was broadly defined. This definition resulted in participants who were moderately disabled. The project ranked sixth among the ten projects in overall impairment (see the composite functional scores presented in Chapter 4). The New York City HCP targeted individuals who were homebound or had personal care needs of 12 to 20 hours weekly. It enrolled the most disabled participants of any demonstration. However, neither project succeeded in enrolling individuals with high hospital and nursing home use. In San Diego, less than 3% of participants entered a nursing home for some period and about 50% were hospitalized one or more times. In New York, about 1% of participants had nursing

home admissions, while 41% were hospitalized. Generally, while New York's clients resembled nursing home residents, they were able to remain in the community because they had relatively stable, yet chronic health problems.

The South Carolina CLTCP project represents a different intervention strategy but is similar to New York HCP in that it enrolled a highly impaired target group. South Carolina was a preadmission screening program oriented toward controlling nursing home use by Medicaid eligibles. Its target group was clients who were Medicaid-certifiable for nursing home care or dependent in two ADL activities. As a consequence of this strategy, the project enrolled impaired individuals genuinely at risk of immediate nursing home placement. This is reflected by the 42% participants who entered a nursing home for some period and the 67% who were hospitalized. Informal care outcomes indicate a fairly successful supplementation/task specialization effort that achieved maintenance of ADL and IADL assistance levels over time.

The differences between outcomes in the San Diego and New York projects (same intervention strategies, different target groups) and the New York and South Carolina projects (same target groups, different intervention strategies) suggest that case management may play the most important role in informal care. As a single entry point/service broker for expanded community systems, neither the San Diego nor New York City projects placed high priority upon mobilizing informal systems. The degree to which informal supports were employed as the preferred sources of care by their case managers is unclear. The New York Home Care Project did not have explicit procedures for incorporating informal caregivers into care plans nor techniques for eliciting increased support. In San Diego, clients and caregivers participated in care planning. The degree to which this translated into tangible commitment when the plan of care was implemented is unclear, since the findings indicate that the LTCP eroded informal IADL care. It appears that defined protocols for supporting or increasing levels of informal assistance were lacking in both projects.

In contrast, South Carolina had an explicit policy of using waived formal services only as a last resort, with special emphasis on

utilizing the informal system as the basic foundation for a plan of care and then adding formal services as needed. The project also had a formal utilization review system when waived services exceeded a cap. This may have stimulated case manager resourcefulness in developing informal supports. Lastly, cultural differences in South Carolina's population (e.g., predominantly rural) may have also played a role in mobilizing informal care.

In conclusion, effects which are definitely interpretable as informal care erosion do not imply such behavior is necessarily the consequence of offering community-based long-term care services. The observation periods for this evaluation were too brief to assess the long-term outcomes of supplementation tactics, however, they do seem to be closely related to the characteristics of a program's target population. In South Carolina, where expanded community long-term care benefits were offered to clients for whom nursing home placement was imminent, supplementation tactics appeared to be successful. These findings suggest the importance of selecting a target group whose members are at a point in their lives where a choice between their home or an institution is or will soon be a reality.

Furthermore, the findings from this evaluation suggest that informal care outcomes appear to be amenable to factors under the projects' control. An explicit emphasis upon maintaining or increasing informal caregivers' participation, coupled with a utilization review mechanism, may serve to reduce informal care erosion and stimulate additional assistance.

NOTES

¹ Informal caregivers, "informal support systems" and "social supports" refer to unpaid assistance voluntarily rendered by individuals selected by the elder from family, friends, and neighbors. The terms "caregiving," "support" and "assistance" are used interchangeably and refer to the totality of personal care (assistance in ambulation, activities of daily living, nursing procedures, medications, and other health-related activities) plus assistance in instrumental activities (e.g., meal preparation, shopping, housekeeping, laundry, escort/transportation) directed toward the goal of enabling the disabled person to remain in the community.

² In this analysis, the project (assessment, case management and services) is treated as the unit of intervention for a given population. This approach has been taken with the rationale that under a national program, it is a comprehensive community long-term program that would be introduced rather than any specific service.

³ In supplementation, there are four general uses of formal services that may not necessarily be accompanied by significant informal care decline. The first is as a planned long-run reduction in caregiving in burdensome activities (arranged by the case manager) where the existing level of effort could not be sustained over long periods. The second use is to create a shift in caregiving among activities that represents a formal/informal task specialization. In this situation, informal caregivers do not "respond" to formal service availability by decreasing their total effort but shift it to the impaired individual's other needs (at the behest of the case manager) in order to concentrate their assistance in a few dependencies. In other situations, formal services are used to specialize in tasks which caregivers physically or emotionally cannot perform consistently. In the case of specialization, total "episodes" of informal care may decrease while the net duration of assistance remains essentially unchanged.

In the third case, formal services are employed to supplement current assistance in those informally-provided tasks. This may be necessary when caregivers cannot assist 100% of the time or when they require additional assistance due to their own physical limitations. For example, two people are often necessary to bathe a dependent elder. Caregivers may be functionally limited themselves and require formal assistance in completing other tasks as well. The fourth application of formal services in the supplementation framework embodies a controversial instance of substitution: when formal services are used to provide a temporary respite for services customarily provided by family caregivers.

⁴ Berkeley Planning Associates, Assessment Reliability Study: Long-Term Care Project of North San Diego County, September 1, 1983, unpublished report to the Health Care Financing Administration.

5The limitation of San Diego's episodes as presentations of informal assistance is an important consideration in interpreting the analyses. First, a single episode of assistance for a given dependency can vary in content and duration depending upon the characteristics of the client and his/her caregiver. This was borne out in a study conducted by BPA in San Diego. Second, while a frequency measure of caregiving activity was selected over duration of assistance measures because of its greater reliability, duration measures of assistance would be preferable. Certainly, a duration measure would be more accurate because assistance time necessary for a given task is unequal across participants. However, duration of assistance is not reliably recalled by older persons. Personal diaries have also been found to be unreliable sources of information for the elderly population by the On Lok researchers. Given these constraints, eliciting episodes according to a detailed protocol by trained assessors represents the best method for measuring caregiving activity that could be employed under these circumstances. Despite the potential for respondent error, the episode measure's representation of the magnitude of caregiving activity represents an advance. Much of the prior long-term care research employed a dichotomous caregiver presence/absence variable as a proxy. This work is also reviewed in Appendix E.

The episode-duration distinction is significant for interpreting the evaluation's findings in two respects. First, comparisons of episodes with units of formal services are difficult. The hours of home health aide or homemaker services consumed by a client group are readily determined; the quantities of formal services represented by informal caregiver time are intangible. Secondly, duration measures are a better representation of the actual load borne by the members of the informal-formal partnership sought by the demonstrations and therefore a precise quantification of the magnitude of observed replacement and supplementation effects. Duration is also important with respect to the caregiving unit's long-term viability and the clients' continued community tenure. Studies at the University of Pennsylvania have found duration of assistance for a given task to be a principal source of burden to the caregiver. Burden levels affect the caregiver's ability to successfully maintain the elder in the community.

VIII. THE DIFFUSION OF DEMONSTRATION INNOVATIONS:
STUDIES OF THREE STATES

INTRODUCTION

It is unusual for health and social service delivery demonstration and research efforts to have significant impacts beyond the demonstration on the organization and delivery of services within their host communities. Unlike other national demonstration efforts, the HCFA demonstrations of coordinated, community-oriented long-term care have been influential in almost all cases in the development of policy changes at the local and state level. The Medicaid 1115 demonstrations included in the national evaluation in particular have been associated in every case with significant changes in state-level long-term care policy. Understanding how these impacts occurred may provide direction to other states and localities as they consider programs of long-term care delivery system improvement.

In pursuit of this understanding, BPA conducted special studies of three projects where the demonstrations played major roles in moving state policies toward statewide management of Medicaid patients in a range of alternative care options. Information was gathered in 1983 mainly through interviews with individuals participating in the states' long-term care policy planning, including state legislators, administrative officials, members of the staffs of the demonstration projects, and representatives of senior advocacy groups and long-term care providers. For each case study about 20 interviews were conducted. Information from relevant documents is also included. A complete report of the diffusion of innovation studies conducted for the Community Long-Term Care Project (CLTCP) of South Carolina, the Multipurpose Senior Services Project (MSSP) of California, and the Monroe County Long-Term Care Program's ACCESS project in New York State appear in Appendix D. This chapter summarized those findings.

The summary begins with a review of Medicaid funding of nursing home and home health care and other background data for each state, describes the events leading to expansion of elements of each project from demonstration to state-level program, and discusses specific ways in which each project contributed to the diffusion process. Important issues considered were: how each demonstration attested to the feasibility of the case management concept; how project directors and staff were influential and how each project's position within or outside state agencies affected its role; and what aspects of the demonstration did or did not carry up to a statewide plan.

IMPACT OF THE COMMUNITY LONG-TERM CARE PROJECT ON SOUTH CAROLINA LONG-TERM CARE POLICY

The most significant long-term care policy development in South Carolina occurred in 1982 when South Carolina's Community Long-Term Care Project (CLTCP) achieved statewide implementation of its major program components as the Community Long-Term Care System.

The context in which the CLTCP was developed included a Medicaid program, which was relatively limited in eligibility and benefits, and home health care programs similarly limited in their ability to serve large numbers of frail elderly. Although the poor aged are extensively covered by Medicaid (and in 1980 nearly 24% of those aged 65 or older in South Carolina had incomes below the poverty level), the kinds of services available are limited. None of the five federally-authorized optional services for the frail elderly are covered by South Carolina's program. South Carolina's home health care programs are comparable in size and scope to those of many other states with limited public funds available. Home health services are required by Medicaid for eligible individuals who qualify for care in a skilled nursing facility, but are unavailable to Medicaid recipients below this level of care. The proportion of the Medicaid and Medicare budgets used for home health services is higher than in many other states; yet, in 1979, only 562 seniors were receiving home health care.

Concern for long-term care policy goes back at least to 1974, when a state legislative and administrative task force convened, anticipating growth in the state's long-term care expenditures. A Long-Term Care Policy Council was created, composed of the commissioners of all relevant state agencies and representatives of the Governor's Office. The council began developing statewide policy and participated in starting the CLTCP as a demonstration to inform state policy decisions. The council's make-up of key power actors in the state system and this prior history of state activities to deal with growing long-term care costs would greatly aid successful development of the statewide expansion of the CLTCP.

The CLTCP was conceived as a pilot for potential statewide implementation, although there was no guarantee that such a statewide program would come into being. In 1979 it began case assessment, service management, and efforts to establish new, community-based long-term care services for long-term care candidates in a three-county region. The CLTCP was fully operational in 1980. At this time, the alarming growth in Medicaid expenditures for nursing home care in the late 1970s and expected increases in the poor aged population pressed the legislature and human service agencies to seek new proposals for containing costs. The Medicaid budget, 40% of it for nursing home care, had increased by 200% in the past decade, so it was naturally a major item of discussion. Coincidentally, although the nursing home lobby had enjoyed strong influence for many years, a 1982 audit report put the nursing homes into disfavor by documenting excessive reimbursements and unwarranted costs.

The State Assembly responded to these influences by dropping the Medicaid hospital stay limit to 12 days per year, changing reimbursement rates and methods to the disadvantage of nursing homes, and limiting the supply of nursing home beds by ceasing the issuance of certificates of need (CONs). These steps, however, did not in themselves solve the crisis or humanely address the problems of the growing aged population.

Meanwhile the Long-Term Care Policy Council directed the CLTCP staff to analyze the effect that expanding the project statewide would have on the need for nursing home beds. The staff found that if a statewide system could emulate the project in diverting 18% of nursing

home placements to home care, the state's bed need could be held constant for three to five years. Although the 18% figure was admittedly weak methodologically, it was widely cited in legislative discussions because no better data was available at the time. Based on this evidence, the Policy Council recommended statewide expansion of the program and the legislature was persuaded that a statewide CLTC system would help it solve the nursing home budget problem.

Carrying the proposed system through the state Budget Control Board (chaired by the Governor), House Ways and Means, the House itself, Senate Finance, and finally the Senate was enormously facilitated by the existence of a Legislative Advisory Committee that reported to the Long-Term Care Policy Council. The committee included some of the most powerful members of the legislature and had praised the accomplishments of the project in previous years. The Advisory Committee, consisting of numerous agency heads, was able to present the legislature with a united front, each agency head exploiting his or her own best legislative leverage. Lawmakers found this coalition of all major agency commissioners, requesting the same program rather than competing among themselves, very persuasive.

On the whole, the CLTC system proposal received neither active support nor strong opposition from other interests, except from county social service directors. These administrators wanted their offices to be used for the expanded assessment and service management services and were opposed to the creation of a new set of regional agencies with a new state office.

In June 1981, the budget for the statewide CLTC system was approved by the General Assembly, while nearly all other programs were being slashed, and in spite of previous plans that statewide expansion should not be considered until after the originally scheduled termination of the project in 1984 and evaluation of its effectiveness. The CLTCP Project Director was appointed director of the new statewide program, to be implemented in 1982. Plans were that the statewide program would consist of preadmission screening and case management; statewide expansion of service was not called for initially.

The CLTCP played an important role in the creation of the statewide program in several ways. In the first place, it provided an expandable model -- and the statewide CLTC system is a genuine expansion of the CLTCP model. Both operate within the Department of Social Services (DSS) under governance of the Long-Term Care Policy Council. They share the same director and some staff, and additional system staff have been trained by project staff.

Creation of the CLTCP was a focus for early consensus-building and shared planning among powerful agency policy makers and legislators which facilitated the move to expand. Placement of the demonstration within the DSS helped its working relationships with key Medicaid and other bureaucratic offices.

The CLTCP Project Director took an active role in the legislative process and was the state's key expert on the proposed model and its implications. CLTCP staff developed the technical design for the statewide system based on their research and experiences. As a group of people of "superior capabilities" with a reputation for excellence, they lent credibility to the concept among legislators.

The research staff's finding that the state could divert 18% of Medicaid-eligible nursing home placements was central to the legislative decision and was supported by other estimates from the project that cost savings would result. In fact, it appears that the project became the central source of research on long-term care for the state agencies, including several analyses not directly related to the project's activities.

One difference between the project and expanded systems is that project patient assessments were performed by project staff, while in the state system, assessments are performed by hospital and nursing home personnel. In this way, assessments can be reimbursed through Medicaid as social services. Level of care determinations are made and care plans developed by the CLTC system staff. Also, the project's assessment and care plan instruments were first used by the state system but were revised to reduce duplications with other required forms.

The state system currently operates only the assessment and service management components of the project. It does not yet have the

expanded community services component. Supported by new project data that show modest cost savings, the community services component implementation was in the process of gaining budget appropriations and HCFA waivers at the end of 1983.

Following passage of the law, statewide implementation was slowed by budget cuts made by an interim commissioner of the DSS who replaced the commissioner who had been on the Policy Council since the project's inception, and who was unenthusiastic about the CLTC system and more favorable to local social service officers. However, in the second year budget, legislative provisos were secured to prevent cuts by the commissioner, suggesting the new system's long range political strength. In Spring 1983, the program was placed under a newly formed Health and Human Services Finance Commission.

Expansion of services through waivers and extension of services to new groups (particularly patients falling into a "Medical Assistance Only" category who are now eligible for nursing home care but not for home health care) are viewed as key to the future success of the statewide CLTC system. Although the initiators of the CLTC concept in South Carolina are motivated by the desire to extend home health care, they must show cost-effectiveness in order to keep legislative funding support.

THE ROLE OF THE MULTIPURPOSE SENIOR SERVICES PROJECT (MSSP) IN PASSAGE OF CALIFORNIA'S LONG-TERM CARE REFORM ACT, AB 2860

MSSP played a major role in the formulation, and a lesser but important role in the passage, of the Long-Term Care Reform Act, AB 2860. This bill represented a major change in California's long-term care policy, and was passed at a time that other serious Medicaid (MediCal) reforms were enacted in the state (e.g., enforced hospital contracting with MediCal).

California has one of the most liberal Medicaid programs in the country, covering a large proportion of the elderly and including four of the five optional long-term care services for the aged. Funds, however, are spread out sparsely among many aged recipients, a fact

which may contribute to the high level of political activism and power of senior advocacy groups in the state.

On the other hand, while the state makes extensive use of Title XX in-home supportive services for the aged, MediCal coverage of home health care has been limited to persons requiring skilled nursing care and further restricted by cumbersome approval requirements. Only six other states spend less Medicaid money for home health care. In California, most home health care has been funded by Medicare and Title XX.

Legislative interest in long-term care was launched in 1971 by nursing home investigations and in 1977 by the formation of a legislative Joint Committee on Aging to establish experimental sites for development of models for an improved statewide system for long-term care. Senior groups and the Commission on Aging were important supporters. MSSP and AB 2860 were separate legislative actions stemming from the same general process of legislative exploration and dialogue. Both of these actions were in response to a widely recognized problem of complex and fragmented programs for the aging in the state. (At least four state agencies and 19 departments administer about 29 different categorical service programs.)

MSSP's explicit purpose was to provide the state with information about methods to encourage independent living among frail elders by coordinating and integrating a continuum of services, and it was legislated with the intention that it might serve as a statewide model. In fact, MSSP was highly influential in shaping AB 2860, as described below, and AB 2860 in turn extended MSSP three years beyond its initial 1983 sunset date.

As with the South Carolina CLTCP system legislation, the formulation and passage of AB 2860 was played out in the midst of a budgetary crisis of which MediCal was a primary focus. In California, nursing home care was not a major concern in cost containment because the state was spending only about 18% of its Medicaid/MediCal funds on nursing homes (versus 42% nationwide). In fact, while AB 799 and SB 2012 (drastic Medi-Cal changes passed in 1982) substantially reduced acute hospital and other reimbursements, lowered financial eligibility levels

to the point that it is more difficult for persons to live on the new amounts, and cut back other benefits, nursing home funding actually increased. There have been no changes recently in nursing home reimbursement methods, although regulation of nursing home beds by denial of CONs has been argued extensively. (MSSP has been cited in this debate by those urging alternatives to institutional care.)

The 1982 MediCal reform laws also spared home health care from rate cuts. Further, MediCal provision of home health services was authorized for a new patient group -- individuals who would otherwise need inpatient acute hospital care for an extended period. These reforms demonstrated the legislature's desire to foster alternatives to institutional care.

AB 2860 grew out of the MediCal reform hearings of 1980 in the form of a bill authored by Assemblyman Torres. One of Torres' most important resources in authoring the bill was the Systems Development Project (SDP), initiated by the state Health and Welfare Agency under a National Channeling Demonstration Program grant. The MSSP Director was influential in getting the proposal submitted, and he and other staff were heavily involved in the SDP Planning Group process and in its concept formulations for the Torres bill. (The On Lok demonstration project was also influential in the SDP thinking, but other HCFA demonstrations in the state appear to have had little influence.)

As passed in 1982, AB 2860 outlined a new state long-term care system, including specific components of its target population, program design, funding pattern, and administrative structure, but leaving the development of a detailed plan for reorganization of the state structure and funding up to a newly created, provisional Governor's Office of Long-Term Care. It prescribes administrative structures and outlines of a statewide case management system generally modeled on MSSP. AB 2860 aims "to avoid inappropriate placement in skilled nursing facilities and to reduce the utilization of acute care hospitals while fostering independent living in the community of the aged and disabled," and to "encourage the development of non-institutional, non-traditional approaches...." MSSP and AB 2860 both use program funds for services beyond traditional institutional services, but AB 2860 goes further than

MSSP by consolidating funds and by gaining authority for its agencies to deny services and to change service packages approved under MediCal and Title XX.

The draft legislation developed by Torres and the SDP subsequently underwent difficult and heated negotiations and revisions. While MSSP was politically well-situated in the Health and Welfare Agency, no broad consensus had been reached in California such as had been managed though South Carolina's Long-Term Care Advisory Council. (The Departments of Health Services and Social Services did not favor the bill and did not participate actively in its formulation or passage.) Ensuing debate targeted these main issues:

- The original version of the bill included only the aged. Some disabled advocacy groups argued that they should be included (while others argued they should not). Finally the disabled were included, because persons with need of similar services should be grouped rather than segregated by age. Advice based on the MSSP experience to keep the target population relatively narrow was apparently disregarded.
- County social service departments argued (as they had in South Carolina) that they should be the sponsoring organizations, and so did Area Agencies on Aging. MSSP had used both county and non-profit agencies as organizational sponsors for local sites; its experience favored the nonprofit sponsors because the county agencies frequently caused delays. The final bill followed MSSP experience in not designating the county offices.
- AB 2860 sought to reduce fragmentation of services by having a consolidated fund finance the new system, with funds shifted from other agencies. The agencies opposed this, saying that it would require dual financing systems prohibited by federal regulations and that administrative costs would increase. However, the consolidated fund remained in the law.

- Legislators feared the new system would increase costs to the state. Proponents successfully argued that the new system would achieve "cost avoidance" rather than cost reduction, by avoiding early institutionalization, maintaining a healthier population and reducing the need for new nursing home beds.

The Department of Finance used MSSP preliminary cost data to argue that the new system would help the state to avoid costs due to nursing home care growth. As in South Carolina, this cost-saving evidence was particularly important to the bill's passage, in spite of the fact that, here again, the data were tentative. Cost-saving evidence was needed particularly to justify start-up costs, which the MSSP director strongly advised be included.

As passed, AB 2860 was highly compromised, to the point that it did not include funds to implement the new system, but required further legislative approval of an administrative action plan developed by the Governor's Office. Without immediate financial risk, legislative support was, of course, more easily gained. Nevertheless, as one respondent said, "The key to the legislators' support for AB 2860 was that they were leaned on real hard by seniors," who had also backed MSSP.

After passage in September 1982, the Health and Welfare Agency appointed an Advisory Planning Team to explore program implementation. This team was staffed largely from the SDP, and thus, indirectly, MSSP influence continued.

Like the CLTCP, AB 2860 promoted MSSP as a "living example" of long-term care delivery management. This was probably more important than any other political activity undertaken or information supplied by MSSP. MSSP was the only source of information on a comparable state-operated program, and provided critical (even though preliminary) evidence of cost savings.

MSSP's placement within the Health and Welfare Agency gave MSSP considerable influence during SDP planning and in providing technical expertise to the bill's authors. The reputation of MSSP staff for

credibility and expertise was also important in legislative hearings. The MSSP Director played a central role in the conceptualization of AB 2860 and in the legislative process. His close involvement with the SDF was continued when SDF funds ran out in 1982, by placement of the succeeding planning group under direction of MSSP.

THE ROLE OF ACCESS IN THE FORMATION OF NEW YORK STATE'S COMMUNITY ALTERNATIVES SYSTEMS AGENCY (CASA)

As the first major assessment and case management demonstration in New York, the Monroe County Long-Term Care Program's ACCESS project was important in assisting other local, innovative case management systems in getting under way, which, in turn, have also informed state policy. ACCESS has also been extremely influential in the development of a statewide Community Alternatives Systems Agency (CASA) as gatekeeping authority for Medicaid long-term care placements.

New York devotes large amounts of Medicaid funds to institutional long-term care and accounts for about 30% of the nation's total Medicaid and Medicare expenditures for home health care. From 1970 to 1975 Medicaid expenditures for home health and nursing homes increased by 265%. At the state level, there is already the Long-Term Home Health Care Program (LTHHCP), which provides comprehensive Medicaid home health care as an alternative to nursing home placement. Its purpose is to reduce long-term care costs and to address inappropriate institutionalization, reimbursement bias toward institutional care, and case management reimbursement needs. LTHHCP began in 1978 and is expected shortly to include all areas of the state.

Still lacking by the early 1980s was a clear organizational structure for New York's nursing home and home care industries and services, which had expanded for many years. Particularly, the state had no pre-admission screening process for hospital patients seeking Medicaid coverage for institutional long-term care, and placement decisions were made by hospital discharge planners with little public oversight. Public officials felt that the process did not assure adequate consideration of home placement options and that some kind of gatekeeping was

necessary as a first step in establishing greater public control over the entire system.

At this point, ACCESS was already providing state officials with an ongoing, highly visible, large-scale preadmission screening, assessment and case management program. Well enough satisfied with ACCESS that they wanted at least to experiment with its general model, the state applied to the HCFA/AA channeling project with a proposal seeking help in financing and organizing implementation of a statewide system.

Federal officials rejected this proposal, but funded the State Office for the Aging with a one-year channeling grant for a Systems Development Project (SDP) to design a statewide system and to gain political support for it. The systems development portion of the grant was subcontracted to the Health Planning Commission, which in turn established an elaborate planning process that embraced high level long-term care agency representatives in a "Planning Group," staff from these agencies in a "Work Group," and representatives of nursing homes, home care providers, medical societies, hospitals, academia, health planning bodies, and the legislature in an "Advisory Group."

While the SDP in California assisted in drafting legislation, in New York the planning process was largely a consensus and trust-building endeavor among agencies, particularly between the key Departments of Health and Social Services, where a long-standing rift existed. This consensual work paid off when the Department of Health allowed the Department of Social Services to take the lead in implementing the new system, CASA.

Concentrating on developing consensus in the SDP project dictated a low profile for ACCESS. There are numerous demonstrations in the state, and CASA would have suffered politically from being viewed as the extension of any one of them. Also, political, social and Medicaid utilization differences between upstate, Republican Monroe County and the Democratic New York City area made it inexpedient to propose that CASA would embody statewide expansion of ACCESS. Thus, the SDP planning group as a whole did not convene with the purpose of extending ACCESS; advocates of the ACCESS model consciously avoided casting CASA as its extension; and program elements from any of the demonstrations, such as

assessment forms, were not used at this stage. Yet ACCESS was in fact providing the working model of preadmission screening and giving important credibility to the idea of local agencies responsible for long-term care assessments and placements.

Although there was informal participation, no member of the ACCESS staff was on the SDP Advisory Group, and direct involvement of ACCESS staff in the CASA planning process was almost non-existent. However, a board member of the Monroe County Long-Term Care Program, Inc., the parent organization for ACCESS, did sit on the SDP Advisory Group. ACCESS had already exerted influence for a number of years because of its high profile among providers and policy-makers, and ACCESS staff were among the few people in the state with firsthand experience in designing and implementing a case management system. They had already traveled widely in the state discussing their experience, particularly regarding gatekeeping functions. ACCESS' Executive Director was well known by almost all of the major participants in the SDP Planning Group, and members of the group came to observe ACCESS.

As in South Carolina and California, ACCESS demonstration research data were useful on the state level. Again, findings on cost-effectiveness were basically inconclusive, and in this case led to a conservative decision to begin CASA in only nine counties, with state-wide implementation pending further evaluation. ACCESS data studying the relationship between assessment site (home versus hospital) and the final discharge destination of long-term care patients is believed to have had a neutralizing influence on Planning Group members initially opposed to CASA.

Experience from ACCESS informed debate on a number of important issues in the SDP planning process. For instance, planners concluded that ideally CASA should resemble ACCESS in attempting to provide case management services for all patients, not just Medicaid patients. CASA planners also followed ACCESS in choosing to base CASA in an agency which provides few or no direct services, while the LTHHCP program, by contrast, works through providers such as hospitals and home health agencies. While CASA works primarily through public agencies and does

not follow the privately-based ACCESS in this respect, ACCESS experience was useful in clarifying this public/private choice.

CASA was implemented under existing regulatory authority, with endorsement by the Governor and without new legislation. Planners felt that delays in the legislative process could be detrimental if they extended implementation into the term of a new governor whose support of the program was uncertain.

As ratified, CASA's overarching objective is gatekeeping, and the program is described as "a creative partnership between state and local government units and long-term care service providers..." It has two local level components, one for gatekeeping/case management functions, the other for local systems development. By incorporating preadmission screening for nursing home applicants, CASA followed the ACCESS model's key programmatic element.

CASA embodies an important shift in state policy: official recognition of the need for more public sector managerial control of the long-term care system and of the importance of preadmission assessment and case management. It consolidates public long-term care functions in a single agency but decentralizes them to the counties -- a major exception to New York's overall pattern of shifting human service responsibilities from county to state. In attempting to strengthen local control over long-term care resource development and management, CASA built on the strong commitment of the ACCESS model to community direction of long-term care.

As CASA has moved from planning to implementation, ACCESS has participated more directly. An ACCESS representative joined the state work group developing screening tools, and ACCESS has been advising CASA staff at the county level in several areas of the state.

CASA responds to the basic issue of controlling Medicaid expenditures for nursing home care; its goal is "to reduce the rate at which long-term care expenditure is increasing by substituting community-based care where less costly, for institutional long-term care placements." However, the problem with non-legislative implementation is that it includes no new funds or waived services. Meanwhile, under budgetary pressures, the New York legislature has enacted various cuts affecting

acute inpatient, nursing home, and home care Medicaid funding. Further, several laws proposed to help in funding CASA have already failed passage. Inclusion in CASA of waived services such as ACCESS offers depends upon legislative action which has also recently failed to pass. (However, CASA is able to use waived services available through LTHHCP.) These funding failures may reflect the low participation of legislators in the formulation of CASA.

DISCUSSION

The CLTCP, MSSP, and ACCESS are all examples of the successful diffusion of an innovative demonstration project to statewide long-term care system redesign efforts. Long-term care system reform was fostered in the three states by alarm at rapidly growing Medicaid budgets and by pressures to contain the growth of the Medicaid-supported long-term care system. The primary targets of cost containment efforts in each state and the contributions of the demonstration to each local political landscape, however, have been unique.

In South Carolina, the main motivation among advocates of the statewide preadmission screening, case management, and community service expansion program seems to have been to promote more use of Medicaid for home care, while containing the growth of the nursing home component of the program. In California, consolidation of a complex, fragmented and confusing array of long-term care programs was sought, with the goal of increasing the use of a variety of alternatives to nursing home care through a single entry point case management service. In New York State, the goal was to promote greater public sector control over an extensive, heavily used system of long-term care services, in large part by introducing greater control over the nursing home admissions process through preadmissions screening and case management services.

Both New York and California had experienced almost a decade of efforts to gain greater control over Medicaid-supported long-term care services. The policy debate in both states was complicated by the existence of various demonstrations and by powerful provider and recipient groups competing for a role in the reshaping of policy. In South

Carolina's less developed long-term care delivery system, an agency and legislative consensus building process guided the development of the demonstration and its movement toward the basis for new state policy supported by legislature. In this case, concern with fiscal constraints and conflicting agency roles resulted in incremental implementation of a statewide program. By contrast, in California the opposition among state agencies and provider and recipient groups resulted in watered-down legislation calling for additional study and program redesign. In New York, the consensus building process failed to sufficiently involve legislative and political actors. In this case, while some regulations were changed and demonstration efforts were broadly disseminated, neither a full-scale implementation of the innovations nor the legislative action necessary for financial support of a statewide effort was achieved. It would appear that major long-term care system reforms are more easily implemented in states with less highly politicized and competitive health and social service delivery environments. More importantly, these three examples suggest the critical role of creating a broad consensus of providers, recipients, agencies, and legislative and political groups in all phases of the demonstration if major reforms are to be implemented.

In all three cases, the role of the demonstration project went far beyond participation by project staff in any redesign efforts. Rather, it appears that the role of the projects as "living examples" of coordinated community care systems that could, in fact, be implemented and managed without major scandals or embarrassment, outweighed relatively limited research findings concerning cost-effectiveness or clinical efficacy. However, the existence of demonstration research data bases was useful in all cases to the development of the statewide reforms, as was the development through the demonstration of "experts" on the long-term care system. Research results often contributed to program design, either through clarifying the impacts of alternative approaches (e.g., the public versus private lead agency debate in New York), articulating appropriate target groups (e.g., the exclusion of less than institutional level clients in California's AB 2860 based on MSSP experiences), or providing expectations concerning program impacts (e.g.

the approximate diversion impacts documented in CLTCP). Thus, the role of demonstration research efforts cannot be underestimated, but it appears that definitive findings are not a prerequisite for the diffusion of innovation.

In all three states, the director of the demonstration project became centrally involved in the promotion of statewide changes. Project staff in all cases were valuable in planning efforts and in legislative testimony. Their experiences in implementation of the demonstration gave them expertise that was unique and respected by all participants in the long-term care system. In California and South Carolina, the placement of the demonstration and its project director within a state agency increased the ability of the project director to influence the change process. In New York, the private character of the demonstration and the unique attributes of the host community (Rochester) resulted in project staff playing more of an indirect role in the state planning process. The influence of the ACCESS staff, director and governing boards, however, cannot be underestimated, given their active participation in local planning efforts throughout the state and the strong ties that developed between key ACCESS personnel and the major actors in the CASA development process.

In all cases, the demonstration was the source of key elements of a statewide long-term care system redesign, but the extent to which new programs were modeled after the demonstration varied. In South Carolina and New York, major components of the demonstration were adopted in the new statewide programs. These projects were successful in promoting the concept of preadmission screening and its direct control of institutional access as the central element in long-term care system redesign. In California, where the single entry-point case management model was adopted for a statewide program, the new program, unlike the demonstration, sought to strengthen the ability of the state to consolidate long-term care services and funding streams. In South Carolina and California, elements such as assessment protocols and case management practices were modeled after the demonstration; these impacts were most pronounced in South Carolina, again suggesting the importance of a planned, coordinated consensus-building process with a broad-based structure. In New

York State, regional conflicts and the power of competing demonstrations resulted in conscious efforts not to model program components on the demonstration beyond the basic preadmission screening concept.

These case studies have provided an informative glimpse of the conditions for long-term care reform based on demonstration efforts. It appears that:

- program features must be well matched to perceived state needs from the beginning of the demonstration effort;
- a broadly based consensus building process must accompany the design and implementation of the demonstration and the movement from demonstration to state system; and
- demonstrations are more important at the state level, examined here, as living examples of the types of reforms sought and as producers of expert advisors than as sources of definitive cost-effectiveness or clinical efficacy data. While the HCFA demonstrations as a group have already been remarkably successful in influencing state policies in long-term care, more complex processes exist at the federal level in long-term care reform, which require longer time frames. Thus, it is too soon to note clear evidence regarding the demonstration efforts' contribution to national long term-care system redesign.

IX. SUMMARY AND CONCLUSION

This chapter briefly summarizes findings from the five projects selected for the in-depth evaluation of participant outcomes and cost-effectiveness. This summary then provides the backdrop for an analysis of the policy implications of the Medicaid 1115 and Medicare 222 demonstrations. The discussion draws upon the evaluation findings to clarify several critical issues related to the organization, delivery, and financing of community-oriented long-term care. The final section suggests several future directions for long-term care program development and policy.

SUMMARY OF THE PARTICIPANT OUTCOMES AND COST-EFFECTIVENESS EVALUATION

This evaluation analyzed the baseline characteristics of the client groups on a range of demographic and functional status variables. Major differences were found in clients' levels of functional impairment among the five projects. The New York City HCP, the South Carolina CLTCP, and On Lok's CCODA projects served clients with the highest levels of functional impairment. The San Diego LTCP served clients whose level of functional impairment fell within a middle range, relative to the other projects. Only one project, Project OPEN, served clients with relatively low levels of impairment.

In general, it was found that client characteristics on demographic and functional status variables were related to the demonstration projects' intended target population. Projects that sought clients in a variety of settings (e.g., home, hospital, or nursing home) with need for either institutional or community-based care tended to serve more functionally impaired clients, while projects that sought community-residing elders in need of improved community services tended to serve less functionally impaired clients. One exception to this pattern was the New York City HCP, which targeted its services to community-residing

elders in need of improved community care, but actually served one of the most functionally disabled client groups in the national evaluation.

Results of analysis of demonstration impacts on participant outcomes were mixed and probably disappointing to some advocates of community-based alternatives to the existing long-term care system. Among the five projects, there were only a few statistically significant program impacts related to participants' functional status, and none related to mortality. That is, the projects did not consistently experience participant outcomes which were different from the existing long-term care system. On the other hand, an assessment of change over time in individual client's functional status suggests that each project was successful in maintaining or improving the functional status of more than one-half of its client population.

Findings from the service utilization and cost analyses were more positive, but still mixed across demonstration projects. Summarized from the perspective of projects' intervention approaches, the results suggested that both the direct diversion of nursing home applicants through preadmission screening and expanded community service represented by the South Carolina CLTCP, and the consolidated model of long-term care represented by On Lok, are associated with reductions in traditional service use that are not totally offset by incremental costs (case management and the waived services). However, the On Lok findings must be viewed with caution because of the sample sizes and data available for the analysis. While Project OPEN and the San Diego LTCP, which represented an intervention approach designed to upgrade the home care package, did produce some reductions in traditional service use, these reductions were largely offset by the increased public costs associated with case management and expanded services. For the New York City HCP, which also represented an intervention approach designed to upgrade the home care package, results were even less positive. There was no reduction in traditional service use and program costs were increased even further with the addition of case management and the waived service package. Together these three programs suggest that an intervention approach designed to upgrade the home care package cannot be expected to achieve cost-containment unless case management costs and

expanded service use can be more tightly constrained. The primary reason for the increased cost in these projects was the expanded benefit package for paraprofessional home care. Since the client populations of the projects designed to improve the home care package were either relatively healthy or chronically ill but stable, there was relatively low utilization of acute care and nursing home services. Consequently, the expanded waived service package became an add-on or incremental cost for these programs.

The analysis of demonstration impacts on patterns of informal caregiving was conducted for three projects and also yielded mixed results. While the New York City HCP, the San Diego LTCP, and the South Carolina CLTCP were all associated with some erosion of the informal support systems, in the South Carolina project there was no reduction in the quantity of assistance provided by informal caregivers, but merely a shift in the types of activities undertaken. The New York City and San Diego projects, by contrast, experienced reductions in the quantity of assistance provided by informal caregivers, though results did vary between ADL and IADL and were encouraging for several client subgroups. These results suggest that the South Carolina project's highly constrained service expansion and intensive case management resulted in encouraging informal caregivers to focus their assistance on those client needs which they were better able to meet. In contrast, the San Diego and New York City findings suggest that providing expanded services to essentially all eligible clients, even in the context of intensive case management, tends to replace, rather than supplement, the role of informal caregivers.

POLICY INFERENCE AND STATISTICAL SIGNIFICANCE -- METHODOLOGICAL CAUTIONS

The national evaluation of the HCFA coordinated community-oriented long-term care demonstrations has been guided by the desire to introduce a greater level of methodological rigor and statistical sophistication than has characterized most prior research on alternative long-term care delivery systems. Such concerns have resulted in a focus on measures with known psychometric properties, control for biased selection in the

formation of treatment and comparative samples, and the application of strict statistical criteria in assessing hypotheses. Yet it must be noted that such "rigor" also carries with it the possibility of prematurely rejecting new approaches to long-term care which may, in fact, be better than the existing approaches. More specifically, by requiring statistical significance at the traditional .05 level in order to consider findings indicative of positive program impacts, the evaluation has placed greater weight on Type II, as opposed to Type I, errors. This traditional approach assumes that Type II errors, i.e., accepting as true findings which are, in fact, false, are the errors that should be avoided most. Type I errors, i.e., rejecting as false findings which are, in fact, true, have been less emphasized and this is consistent with a knowledge-building approach, which attempts to avoid prematurely foreclosing avenues for research. A "wrong conclusion" accepted prevents researchers and practitioners from looking for better approaches.

On the one hand, as policy analysts in recent years have argued, this knowledge-building approach is not always consistent with the needs of policymakers and practitioners. The policy process will continue and policymakers must act. Rejecting a new approach based on strict significance testing is not simply avoiding premature closure on a new approach, it also implicitly assumes acceptance of the status quo. On the other hand, since the existing long-term care system is generally viewed as very expensive and counter to the best interests of long-term care consumers, their families, and society at large, the costs associated with Type I errors can be very high.

Because there were relatively few statistically significant findings in the conventional sense related to participant outcomes and cost-effectiveness, the evaluation results do not support the belief that, on the whole, these new approaches are "better" than the existing long-term care system. However, the finding of statistical nonsignificance at this strict level also indicates, in general, that the community-based long-term care systems are not less effective than the existing systems of care. Therefore, if there are reasons related to consumer preference or social values for selecting new long-term care programs over those currently in place, these reasons should dominate

the policymaking process. It is this approach which has been taken in the policy discussion which follows. Although all of the projects did not experience statistically significant program impacts, several either approached statistical significance, or the general direction of the program impacts was positive; therefore, these projects warrant inclusion in the discussion of policy implications.

MEDICAID 1115 AND MEDICARE 222 DEMONSTRATIONS IN THE CURRENT POLICY CONTEXT

The HCFA-sponsored demonstrations included in this study represent among the earliest efforts in long-term care reform. As such, these demonstrations set the stage for more recent Medicaid and Medicare reform initiatives directly linked to current policy priorities. Among the most important concerns being addressed are: (1) the implementation of the new prospective reimbursement system to acute care hospitals using Diagnostic Related Groups (DRGs) under Medicare; (2) demonstrations of competition-oriented reforms in both Medicaid and Medicare financing and delivery; (3) demonstrations of social health maintenance organizations for dependent adults; (4) demonstrations of case-managed home- and community-based services for clients qualified for an institutional level of care under Section 2176 Medicaid waivers; and (5) the national Channeling Long-Term Care Program and associated evaluation. All of these reforms and demonstrations address issues central to the design of both delivery systems and financing systems. While the coordinated community-oriented care demonstrations in this study were implemented under a different health care policy environment, the results of the evaluation are relevant to current health systems interventions. Below, five policy issues relevant to current long-term care reform initiatives are discussed in terms of the contributions of the Medicaid 1115 and Medicare 222 HCFA demonstrations.

(1) Targeting Community-Based Services -- Who to Serve?

A consensus is emerging in the long-term care field that community-oriented alternative long-term care programs can only achieve cost

containment if services are targeted to those individuals who, in the absence of community care, would use nursing home care. In recent years, a number of demonstration projects have documented the difficulty in identifying this subgroup of the elderly population. There are numerous community-residing elders whose medical conditions and functional status would qualify them for publicly-supported nursing home care, but these elders do not seek or use such facilities. At the same time, there are perhaps even more community residents whose deteriorated functional status, unstable medical conditions, and socially isolated living arrangements might suggest risk of nursing home placement or at least the need for additional publicly-supported service, but these elders are neither nursing-home-eligible or nursing-home-bound.

Consistent with these earlier findings, in this evaluation the two projects which demonstrated cost containment even after the incremental costs of case management and expanded community services were considered -- South Carolina CLTCP and On Lok CCODA -- were precisely those projects that served individuals with both high levels of functional impairment and high risk of nursing home placement. In these projects, both the treatment and comparative groups made greater use of nursing home care than in the remaining three projects. By successfully targeting their services to individuals who were truly at risk of nursing home placement, and, in fact, reducing the use of nursing homes relative to comparative groups, these two projects achieved cost containment.

By contrast, the New York City HCP, the San Diego LTCP, and Project OPEN, even though serving some individuals with severe functional impairments and notable service needs, did not identify a client population with high risk of nursing home placement. While clients were served at least as effectively as in the existing system and use of traditionally available services under Medicare and Medicaid was, in general, no greater than in the existing system, the provision of case management and expanded community services represented additional public costs. Since case management and expanded community services were expensive to provide, and the extremely low levels of nursing home use could not be reduced, cost containment was not demonstrated.

Thus, the evaluation's findings are consistent with the recent emphasis on targeting community care to individuals "who but for" the provision of community services would require nursing home care. The findings also shed light on how to identify this population. It has been assumed in both the Medicaid 1115 and Medicare 222 demonstrations, as well as in the Channeling experiments, that an appropriately detailed assessment of functional, psychological, and social status will result in identifying a target group for whom community-based services will be cost-effective. The results of this study, however, do not support this view. The New York City HCP served one of the most functionally impaired client groups, based on traditionally used functional assessment measures including ADL, IADL, and MSQ. Nonetheless, use of nursing home care was minimal among the treatment group. Furthermore, in each of the projects, demographic and functional status variables (e.g., age, living arrangement, physical and cognitive impairment) had little predictive power with regard to nursing home use and expenditures (and, in fact, little predictive power with regard to overall service utilization and costs). Several other studies have also found little evidence for the predictive power of these factors with regard to nursing home use in prospective studies of community-residing chronic care populations (Branch and Jette, 1981). Although demographic and functional impairment measures may distinguish nursing home residents from the general aged population, these variables are not adequate indicators of nursing home use among chronic care populations (Weissert and Scanlon, 1983).

The findings from this evaluation suggest that, instead of focusing exclusively on levels of medical and functional impairment, the targeting strategies of the South Carolina CLTCP and the On Lok CCODA project should be pursued. Their targeting strategies require that, in order to be eligible for the program, individuals must meet externally-established criteria for nursing home admission. But, in addition, the two projects attempt to target their services to individuals who are actually being considered for nursing home placement or for whom community tenure no longer seems feasible.

In the South Carolina CLTCP, this was accomplished through the use of nursing home preadmission screening. Its target group included all

individuals (either in the hospital or in the community) who applied for and were qualified for nursing home admission. In most cases, the need for nursing home admission resulted from a complex set of variables including but not limited to functional deterioration and the exhaustion or loss of informal caregiving supports. In the On Lok project, pre-admission screening was not used, but the program sought only those individuals who had reached a near crisis situation in the community. In order to be eligible for the program, all participants had to be approved by the state MediCal representative as eligible for either ICF- or SNF-level of care.

Thus, while the preadmission screening approach may represent the most explicit and viable mechanism for identifying individuals for whom nursing home placement is a real and perceived need, it is the focus on such individuals, rather than the mechanisms for their identification, that appears crucial. In order to identify a client population truly at risk of nursing home placement, targeting criteria must identify those individuals who are not only "at risk" but who are nursing home "eligible" based on an external review. In addition, it is important to select a client population among which both the client and the informal caregiver prefer community rather than nursing home placement. By using these variables in conjunction with traditional measures of demographic and functional status, community-based service programs should be able to appropriately identify a client population for whom services will be cost-effective.

(2) Building Formal Service Programs on the Foundation of Informal Caregiving

Another area of emerging consensus in the field of long-term care is that effective community care systems must be built upon the foundation of informal caregiving. Most chronically ill and impaired elders in the community are supported primarily through caregiving by an informal network of family members and friends, while the erosion or loss of informal caregiving systems has been repeatedly linked to nursing home placement. The findings from this study document the importance of

fostering and sustaining informal caregivers in their efforts to help an elder person remain in the community.

Demonstration impacts upon patterns of informal caregiving were only available and analyzed for three projects, but the variations in findings from these projects are illuminating. Two critical findings emerged. First, there will undoubtedly be some erosion effect on the informal support system as new publicly-provided and -financed services become available, unless major efforts are undertaken to sustain and build upon the existing informal support system. Second, if the overall planning and delivery of community-based services explicitly includes and builds upon the informal support system, then the formal service system can be potentially more cost-effective.

Erosion of the informal support systems was evident to some extent in each of the demonstration projects studied. In South Carolina, however, where the service plans for individuals were designed explicitly to augment the informal support system, there was not a reduction in the level of effort by the informal caregivers, but merely a shift in the kinds of activities undertaken. The efforts of the informal caregivers were alleviated and replaced in certain tasks, but their efforts were then shifted to other tasks, perhaps where the informal provider was more efficient or effective, or where there would be less stress on the informal provider and a greater likelihood of sustaining the service of informal care over time. In the San Diego and New York City projects, where explicit attention was not given to encouraging assistance from the informal support system, there were declines in both the type of care given by informal caregivers and in the overall levels of care provided.

Thus, while the South Carolina project developed a successful strategy of supplementing informal caregiver activities by encouraging specialization in particular tasks that caregivers felt more able to assist with, the approaches used by the New York City and San Diego projects resulted in primarily a replacement of informal caregiving with formal services, although some supplementation did occur. It appears that the South Carolina project was more effective in limiting expanded community service to only those individuals for whom informal caregiving

was inadequate, while working with informal caregivers in such a manner as to maximize their participation.

While the analysis does not permit attributing the cost-containment which was found in the South Carolina project to the effective utilization of informal caregivers, it nonetheless is noteworthy that supplementation rather than replacement was found in this project but not in the other two projects where cost-containment impacts were not found. The application of a "cap" on formal service provision in South Carolina, as well as an explicit policy for case managers to prescribe formal services only after informal caregiving options had been fully pursued, seems to have resulted in the lower use of the expanded formal service system and the resulting cost-containment findings. While all three projects involved informal caregivers to some extent in the development of care plans, it appears that the lack of adequate fiscal controls over community service prescription and a failure to consciously use formal services only as a last resort when developing a plan of care resulted in these differential findings.

While it was beyond the scope of this evaluation and, in fact, has not been the subject of other research efforts, these results indicate the importance of assessing alternative care planning and case management processes. Information is needed on how case managers can be trained to reinforce and sustain informal caregiving and on how to more effectively integrate informal caregiving and formal services into the development of care plans. These issues are particularly salient for community-based service programs which have a large population of their clients who live with their families.

In addition, further research that could yield policy insight on the informal care system is possible with the data now in place from these demonstration projects. The public's replacement dollar costs could be assigned to those services which the informal support system ceases to provide, in order to assess how important any erosion effect actually is in terms of fiscal impact. This technique could also be used to assess the service value currently being provided by the informal care system, so that the worth of efforts to maintain the system over time could be assessed. It would also be feasible to assess the

differential effect of types and levels of informal care provision on the impact of public long-term care programs, and on the functioning and need for nursing home and acute care of elderly and impaired individuals. Such a direct evaluation of the impact of the informal care systems was not part of the scope of the current evaluation effort.

(3) Tailoring Services and Case Management to Clients' Needs

Apart from the role of informal care provision, there is much to be learned from these demonstrations about the appropriate mix of services for different client populations, i.e., "tailoring" services to client needs.

Case management emerges from the demonstrations as a particularly important element in the overall service package. Case management was extensively drawn upon by the successful South Carolina and On Lok projects in helping target the program to those clients most at risk of nursing home and acute care utilization. Case management was also a key factor in the South Carolina demonstration's ability to make maximal use of informal care providers and to provide only those waived services truly necessary to prevent institutionalization. In fact, in contrast to the other projects, case management was the dominant "service" provided in the South Carolina demonstration project. Within the On Lok program, case management was an important component in the project's success in targeting and reducing use of skilled nursing facilities.

In the three other projects (Project OPEN, the San Diego LTCF, and the New York City HCP) case management was not as clearly defined or emphasized. Perhaps, as a result, those projects provided to clients waived services which (a) were often available through other sources in the community (as evidenced by the fact that the comparative groups were also receiving them); (b) were simply replacing some services that had been previously provided through the informal support system; and/or (c) were not absolutely necessary in preventing nursing home and acute care use, since the majority of clients in these three projects were not often at high risk of institutional care. Such waived services may clearly have been helpful to the clients who received them -- half those clients did exhibit gains in functioning -- but the expenditure

represented additional public costs without offsetting cost savings in other components of the long-term care system. More reliance on case management and less liberal provision of waived services in those projects could reduce the "incremental costs" for those demonstrations, and thereby, in the future, shift those projects into overall cost savings for the government.

This emphasis on case management is not meant to imply that waived services are unimportant. For certain individuals, waived services may have been the critical element in improving that client's functioning or keeping him or her out of a nursing home. The data base now assembled will permit analyses of the impact of different types and mixes of waived services, although that analysis was not part of the current evaluation effort.

What is clear from the current evaluation is that in projects designed to upgrade the home care package, waived services are not being systematically prescribed or tailored to clients in such a way that cost savings are being achieved relative to the comparative groups. In these projects, there appeared to be a tendency to give clients those services which were available in the demonstration, whether or not those services were the services clients most needed, and whether or not those services were, in fact, needed to avoid the use of more expensive nursing home and acute care. In short, organizations gave what they had rather than tailoring services to the different needs of clients. This expanded the amount of services received by clients and increased the demonstration's costs without necessarily substantially improving client outcomes.

(4) Controlling Acute Care Use for Chronic Care Populations

A major finding of this study was that acute care use, particularly in the programs designed to upgrade the home care package, represented the largest single component of public costs. In order to be cost-effective, controlling acute care use must become a major goal for delivery systems serving the chronic care population. With the implementation of the new prospective reimbursement system under Medicare, acute care providers themselves face new incentives to control the use

of acute care beds by long-term care patients. Similarly, the competition-oriented reforms in Medicaid and Medicare will require reductions in acute care use, as the largest component of health service utilization, in order to be viable. Examining findings from this study sheds some light on the degree to which community care systems can be one component of the strategy to reduce acute care use.

Several of the HCFA community care demonstrations were specifically designed to reduce acute care utilization by either facilitating discharge of long-term patients (and thus reducing length of stay) or by preventing unnecessary hospitalization and rehospitalizations through improved outpatient management of chronic health conditions. The findings indicate that the demonstrations did not significantly reduce acute care use in any of the demonstrations, though savings to Medicare did accrue from shorter lengths of stay in South Carolina, and lengths of stay were reduced in Project OPEN. In one project, however, acute care use actually increased. There was no evidence from any project of a statistically significant reduction in the number of acute care admissions relative to the comparative groups. It would appear, then, that efforts directly focused on hospitals, either through preadmission screening or by basing community care delivery systems in hospitals, can result in some reductions in acute care lengths of stay, but other approaches will be required for these reductions to achieve significant levels.

The findings also indicate that the provision of paraprofessional home care services which dominated the waiver service packages of most of the demonstrations does not, in general, result in decreased exacerbations of chronic conditions and associated hospitalization. In fact, the San Diego LTCF's use of a teaching waiver to provide health education with the goal of reducing acute exacerbations of chronic conditions appeared ineffectual. Therefore, it seems more useful for projects to focus on reductions in length of stay through facilitation of early discharge until there are clinical developments to support intervention focused on avoidance of rehospitalizations associated with the progress of chronic diseases.

It should be noted that these demonstrations, with the exception of On Lok, were initiated under traditional fee-for-service reimbursement mechanisms. Although On Lok did not significantly reduce the use of hospital care, there were overall reduction in public costs for such care which were achieved through the negotiation of favorable prospectively-determined rates. Social health maintenance organizations and other competition-oriented reforms in health care delivery may be able to achieve such reductions as well.

CONSISTENCY WITH OTHER LONG-TERM CARE EVALUATIONS

The evaluation findings for the five demonstrations presented in this report are consistent with past research which evaluated community-based alternatives to long-term care. Those other efforts are summarized in the participant outcomes and cost chapters of this report and are described at length in a separate volume entitled Analysis of Client Data from the Long-Term Care Demonstrations (BPA, 1982).

Consistent with this evaluation's findings, other studies have generally not found meaningful reductions in the use of acute care. On the other hand, these studies have found that case management coupled with expanded community services reduces nursing home utilization. While the findings are not always consistent across the various functional measures, other studies have also shown that community-based service programs tend to maintain or improve participant functioning on measures of ADL, IADL, and MSQ, and to reduce mortality. Rarely, however, are the differences from the comparison groups statistically significant using conservative criteria (e.g., .05, .01). The pattern with regard to overall cost savings has been less clear. A number of projects (e.g., the Wisconsin Community Care Organization, 1976-79; the Georgia Alternative Health Services demonstration, 1976-80; the Triage demonstration in Connecticut, 1976-81; Florida Pentastar demonstration, 1982-84; the California Multipurpose Senior Services Project, 1980-date) found, as was true in three of the five HCFA demonstrations assessed in this report, that the costs of waived services, case management, and project administration were greater than any cost savings in

institutional care (acute and nursing home care) that might be realized by Medicare and Medicaid. In some projects, like Triage, overall costs of traditional and community-based care were almost equal, and the evaluators concluded positively that improvements in client functioning and reduced need for nursing home placement had been secured at essentially no net cost to the government. In other projects, like the California MSSP, improvement in client functioning was achieved, but there were also major increases in overall cost. These broad generalizations simplify what are complex, often multi-volume presentations of findings from those demonstrations and their evaluations, most of which express qualifications related to imperfections in comparison or control groups, differences in measurement, incomplete costing data, and other methodological considerations. However, discussions also indicate that the findings from the earlier projects and this study are very consistent with those that have recently emerged from Mathematica Policy Research in their analysis of the first six months of data from the national Channeling demonstrations.

Other evaluations have also produced findings consistent with the policy directions suggested by this study. Studies which have done such analyses (e.g., Triage, Georgia AHS, Florida Pentastar, California MSSP, Wisconsin CCO) have found that the more services could be focused on a severely impaired population truly at risk of nursing home placement, the more likely that cost savings or greater effectiveness without increased costs could be achieved. Indeed, a general problem in many studies (e.g., MSSP, Georgia AHS, Channeling), as for the HCFA projects evaluated here, has been the overall low rate of nursing home utilization among the experimental and comparison groups. When screening people for demonstration projects (for experimental groups, but also for control groups), most programs have used functional status and age as proxy measures for frailty. Yet when analyzed, service utilization and costs have been poorly predicted by client characteristics, impairment, and functional status at intake. Even in those projects which used strict screening criteria to try to ensure a frail elderly client population (e.g., the Channeling project), the overall rate of nursing home utilization in the experimental and comparison groups was low. It appears

that -- as was found in this study -- functional status and level of impairment are weak indicators of risk or need for institutional care. In order to focus services on individuals truly at risk and thus maximize the cost savings that can be gained with community-based care, different strategies -- like preadmission screening at the time an older person is considering entering a nursing home -- are needed.

DIRECTIONS FOR THE FUTURE

Two of the five demonstration projects were able to achieve reductions in nursing home utilization and thereby achieve cost savings that were more than enough to offset the extra costs of case management and waived services -- the "incremental costs" of the demonstrations. The South Carolina and the On Lok CCODA demonstrated reductions in use and overall cost containment at or approaching statistical levels of significance. These two projects -- and the approaches they exemplify for community-based long-term care -- are the "models" for future emulation by national policy.

Even among the projects that were not successful in achieving cost containment, the directions for future improvement are evident. If those projects were to reduce the amount of waived services provided to their clients and instead emphasize the provision of case management to assist clients and their families in securing the needed services through the informal support system or other community sources, their costs could potentially be reduced. Such a reduction in cost might make these projects shift into the "success" camp of cost containment even without a change in targeting. However, for each of these projects, a shift in program design to emphasize "targeting" clients at high risk of nursing home placement would substantially improve the projects' likelihood of achieving cost containment.

Based on the findings of this national evaluation, a number of key issues related to future policy development and research in community-oriented long-term care can be identified.

(1) Strengthen the Preadmission Screening and Case-Managed
Community Care Model

The results of this study suggest that at least in a relatively service-poor area such as South Carolina, the provision of case-managed expanded community care in the context of a preadmission screening program represents one of the most viable approaches to reform of the long-term care system. However, several features of this model need further development. First, if case-managed community care is only to be offered to those who are actually considering nursing home placement, there is a potential discovery effect. That is, individuals who had not previously considered nursing home placement may apply for such care in order to become eligible for case-managed community care. While this potential discovery effect can be controlled through an application process which requires that all applicants be certified as eligible for nursing home care, additional elements to reduce the discovery effect may be required. Second, the preadmission screening model has not been evaluated in the context of a larger and more complex long-term care system. Such an evaluation is being conducted as part of this national evaluation's assessment of the ACCESS II Combined Medicaid and Medicare demonstrations in Monroe County, New York, and the results will be available in 1986. There is also a need for exploration of more limited preadmission screening programs based in single hospitals or groups of hospitals and their associated outpatient populations, as in some of the programs designed to experiment with hospital initiatives in long-term care. Third, the preadmission screening approach has not been tested in the context of prepaid capitated reimbursement-based delivery systems. By combining this service system reform with reimbursement reforms, greater cost-containment impacts may be achieved. Fourth, there is a need for a better understanding of the care planning and case management processes within the preadmission screening model in order to understand the best mechanisms for assuring the appropriate mix of formal and informal caregiving.

(2) Further Explore the Consolidated Model of Long-Term Care

While the results of the evaluation of the On Lok CCODA were encouraging, several factors in the design of that demonstration and its environment suggest the need for more convincing assessments of the CCODA model. The utilization and public payment data for the On Lok analysis, as well as the available sample sizes, were inadequate, leaving the need for caution in interpreting the generally favorable results. It is possible that the combined Medicaid and Medicare demonstration currently underway by On Lok will address these concerns. While the social health maintenance organizations (SHMO) that will be demonstrated in the coming years have grown out of the On Lok model, they differ in terms of the broader client mix and expected average lower level of impairment among their client populations. The SHMOs will not test the CCODA model, and such a test does appear warranted by the results reported here, since On Lok produced some of the more favorable findings in the national evaluation from both the perspectives of client outcomes and cost containment.

Even if the On Lok CCODA model is not replicated or re-examined, certain elements of that model may be appropriately introduced into future programs, particularly the On Lok reimbursement structure which created fiscal incentives for judicious use of the community care services.

(3) Develop Procedures for Encouraging Reciprocal Relationships between Formal and Informal Care

Results of the evaluation clearly indicate that differences in case management and care planning protocols are associated with differences in community care impacts on the maintenance or erosion of informal caregiver participation. Little is known about what training and supervision of case managers is required in order to produce positive impacts on informal caregiving. It is not known how case managers most effectively work with families to encourage their continued participation while simultaneously directing their efforts towards those elements of care that they are most able and willing to provide. Fiscal incentives as well as clinical procedures that are designed to produce a

reciprocal relationship between formal and informal service provision need to be developed. Further attention to taxation-based and other fiscal incentives to families to encourage continued informal caregiving should also be explored.

(4) Improve Targeting Procedures and Service Packaging for
Community Care Programs

The findings from this evaluation have shown that traditionally used measures such as demographic characteristics and functional status do not consistently identify individuals who would almost certainly enter a nursing home if expanded community services were not available and for whom community-based care will be cost-effective. With the exception of the nursing home preadmission screening program, it is unclear just what mechanisms are required to develop procedures for identification of this relatively small subgroup of community-residing elders who are both nursing-home-eligible and nursing-home-bound. Given the current emphasis on expanding community care services, it is important to focus attention on this targeting issue. The evaluation findings suggest that a much better understanding of the factors which determine institutionalization is required, and that more emphasis needs to be placed on variables which focus on the relationship between the older person and the system of care existing within a given community.

Until assessment procedures become refined enough to accurately predict which elderly will actually enter a nursing home in the absence of community-based services, the rapid expansion of community care services which is currently taking place will probably result in the provision of community care to many elderly who have little or no risk of nursing home placement. Results of this evaluation, particularly the Project OPEN findings, suggest that case management may be the most appropriate publicly-supported service for the less impaired elderly. Since these individuals tend to be at early points in their career of long-term care use, they are likely to have financial and informal caregiving resources that could be marshalled in support of their community tenure with the assistance of case management.

For elderly who are moderately impaired, but do not qualify for a nursing home level of care, both case management and expanded community services will probably be required. In order to be cost-effective, these community-based programs will need to incorporate a number of cost-containment features. The program design features identified in this evaluation that can potentially have a major impact on cost containment include: developing a formal service system based on a reciprocal relationship with informal caregivers; using less expensive approaches to community-based care such as adult day health care or rather inexpensive home care packages; placing "caps" or an upper limit on the costs which can be expended for community care; and introducing an equitable co-payment system. Each of these approaches needs to be further explored. What is clear is that in order to be consistently cost-effective, community-oriented long-term care projects must develop explicit cost control mechanisms.

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ATTACHMENT 1

Production Costs of Case Management
and Coordination Systems

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PRODUCTION COSTS OF CASE MANAGEMENT AND COORDINATION SYSTEMSBACKGROUND

During Berkeley Planning Associates' (BPA's) three-year national evaluation for HCFA of 13 coordinated community-oriented long term care demonstration projects, considerable attention has been focused on the details of the case management process as it is carried out in each demonstration project site. It is in large part the case management process which distinguishes these projects from earlier efforts to maintain aging and disabled persons in their homes. All the projects studied share an emphasis on case management as a strategy for coordinating resources and for monitoring and improving the quality and appropriateness of care.

One factor in the case management and coordination process that has come to the attention of most observers is that it is a labor-intensive, time-consuming process, and therefore potentially an expensive strategy. Large differences have also been documented in the goals and designs of case management as it was undertaken in each of the demonstration projects. Thus, a special study was undertaken as part of BPA's overall cross-cutting evaluation in order to answer the question: just how much does the production of case management and system coordination programs cost? A focus of additional analysis is to learn the net impact of the case management strategies on clients' functioning and health. Thus, BPA ultimately will be able to assess, using information from these combined analyses, the relative costs and impacts of different case management strategies for community-oriented long-term care. However, the current discussion is limited to an examination of the relative costs of case management and coordination as observed in selected HCFA demonstration projects.

As one part of the national evaluation of community-oriented long-term care demonstration projects, Berkeley Planning Associates has attempted to identify, isolate, and measure the costs of the case

management and coordination process itself.¹ Ultimately, the purpose of this activity is to compare the costs of case management to measures of benefit (or cost savings) such as the following:

- the cost-avoidance to DHHS and the states in particular resulting from decreased utilization of "nonessential" or "inappropriate" Medicaid and/or Medicare services by project clients; and
- savings and benefits accruing to project clients, taking into consideration any measurable increase in well-being (health, independent functioning in the community, etc.).

Definition of Case Management and Coordination

A cost analysis requires the allocation of costs to a particular activity. Before discussing BPA's approach to this problem, it is important to define case management and coordination. Through this definition, it is possible to circumscribe those activities that need to be taken into consideration when examining costs.

For the purposes of this study, case management was defined as the provision of an administrative service that directs client movement through a series of phased involvements with the long-term care system. Case management encompasses the following activities:

1. Direction of client movement through the system:
 - outreach (contact with other agencies in the community, education about project goals, service capabilities, and appropriate clients for referral);
 - intake (responding to referrals, seeking referrals, and initial measuring of client needs);
 - certification of eligibility; and
 - determination of appropriateness for project services.
2. Comprehensive assessment/reassessment of client needs:
 - clinical assessment, nursing assessment, social work assessment;
 - obtaining physician and other provider recommendations/prescriptions;
 - determination/establishment of level of care;

- initial and full assessment of services received; and
 - recommendation of locus of care.
3. Tailoring service intensity and combination (care planning):
 - obtaining feedback from providers;
 - development and modification of service programs;
 - arrangement and coordination of services;
 - planning and implementing termination of client or services;
 - monitoring and approval of changes to service; and
 - cost analysis of alternate care plans.
 4. Monitoring service delivery (ongoing case management):
 - obtaining feedback from providers;
 - assurance that client is following service plan;
 - examination of progress toward treatment goals;
 - maintenance of relationships with providers;
 - minimal service provision (such as limited counseling); and
 - review and approval of client service bills.
 5. Other client-related services:
 - paperwork related to maintaining client services;
 - contact with clients and informal caregivers;
 - routine reporting to funding agency or agencies; and
 - planning for continuation of needed services for individual clients after their termination from the project.

Among the HCFA demonstrations studied, the case management process differed from project to project in many ways. The particular activities included for each major component varied as a function of overall project goals. At the operational level, projects differed both in the type and level of professional training of staff performing the functions listed above and in the division of responsibilities among different case management activities by different members of the service delivery teams at each project.² Thus, an important preliminary

question for this analysis was: to what extent are the costs of case management comparable across projects, or to what extent can they be made comparable by making a series of assumptions about (1) what should be counted as production costs, and (2) what constitutes a unit of service.³

Definition of Production Costs

In addition to a definition of case management, it was also important to define which costs would be considered as production costs. In theory, the cost of case management for a social worker who received a master's in social work from a state university included the taxpayer's subsidy that enabled the social worker to obtain the needed skills at a bargain price. While this may seem extreme, it illustrates that there are some costs of case management that are so remote from the case management process that they cannot reasonably be included. For the purposes of this study, BPA included any cost area that was necessary and current to the day-to-day function of case management and was provided for at the individual project level -- phrased as a question, "If these expenditures (salaries, rent, accounting, etc.) did not exist, would the quality or quantity of case management services be affected?" If the answer to that question was "yes," then the portion of those service costs that related to case management was allocated to the cost of case management. This definition of costs precluded the inclusion of any costs related to BPA's evaluation of the program and any federal costs, such as program oversight due to the demonstration nature of the projects and the costs of the required research activities. This definition did include, however, all general and administrative expenses necessary to the successful operation of the project.

In order to arrive at comparable measures of costs in a number of projects, taking into account the differences in case management activities from one project to another, a number of approaches were possible:

- simply use the total cost of the demonstration project, (excluding the cost of purchased services), since the primary focus of the projects was case management;

- list and define case management tasks, and determine the costs of those tasks only, taking into account only the reported number of hours spent by project staff performing those tasks and the salary levels of those staff. This would amount to excluding the costs of administration and other direct costs of operating the projects, such as the cost of space, telephone, and travel; or
- use a notion which we have termed "replication-relevant costs," which consisted of all project costs except for (1) the costs of purchased medical and long-term care services, and (2) costs attributable to the fact that the projects were part of a nationwide demonstration program. In other words, by taking the total nonclient service costs of operating the projects during a mature operational phase (see definition below) and subtracting out the costs of research and "demonstration administration" (as opposed to general administration), we would be able to determine what costs would be present if the projects' approach were to be replicated in other, nondemonstration settings.

The last of these three approaches was selected, since the first approach would have included costs that were not directly attributable to the case management process, and the second approach would depend too much on what the activities were in a given project that constituted case management, and would thus be too variable from project to project.

Definition of a Standard Unit of Measurement

The intent of a Standard Unit of Measure is to provide a uniform statistic for measuring and determining unit costs, normally used to facilitate comparison either among comparable entities or outputs or between various time frames of the same entity. Standard Units of Measure (hereafter referred to as SUMs) are widely used in other health-

related fields to define activity volumes and related costs. Examples include:

<u>Activity</u>	<u>SUM</u>
Hospital Services	Number of patient days
Home Health	Number of home visits
Skilled Nursing Care	Number of patient days
Respiratory Therapy	Number of treatments
Surgery Services	Number of surgery minutes

An important design decision for this cost study was the choice of a standard unit of measurement: whether a single SUM should be used that would permit comparison of unit costs across projects, or whether to group projects with similar case management components so that the SUMs within a group would represent more comparable sets of activities. Since a central goal of this study was to compare the unit costs of different "models" of case management, rather than to assess the cost-effectiveness of individual projects, it was decided that a single SUM should be used that would allow for variation in case management activities and intensiveness. For example, it was important to be able to compare costs across projects, even though only one project certified level of care as part of the case management process. Thus, BPA decided upon the number of client enrollment months as the unit for measuring costs.

This approach allows for comparison of costs across different types of projects, while within projects with similar case management practices it allows for comparison of costs associated with differences in the organizational setting of the project and with differences in staffing patterns. The only difficulty that this approach created is that it was not always possible to determine with certainty how much of the cost differential between two projects was attributable to differences in case management practices and how much was attributable to other factors such as differences in types of staff utilized.

METHODOLOGY

Briefly, the study of the costs of case management proceeded by the following steps:

- choice of projects for analysis;
- a thorough analysis of the accounting systems in each project to ensure that it would be possible to gather comparable cost information for all projects⁴;
- choice of time periods for analysis for each project;
- collection of specific cost information for each project during the time period in question;
- determination of which costs should be included for each project, based on discussion of case management activities and process with project directors and case management staff;
- determination of average monthly caseload for each project during the time in question; and
- division of total case management costs by average number of clients per month to arrive at the costs of case management on an average per-client, per-month basis.

These steps are described in the sections which follow.

Choice of Projects for Analysis

Five of the six long-term care demonstration projects which remain as a central part of the overall BPA evaluation were included in the analysis of production costs of case management and coordination systems:⁵

- Home Care Project, New York City Department for the Aging;
- Long-Term Care Project of North San Diego County;
- Mt. Zion Hospital and Medical Center's Project OPEN;
- South Carolina Community Long-Term Care Project; and
- On Lok Senior Health Services Project (Community Care Organization for Dependent Adults).

These five projects exhibited a wide range of levels and types of case management activity. One important difference among them was in their intervention approaches.⁶ The three major types of intervention approach represented by the projects included in this special study were the following:

- (1) To upgrade or improve the quality of the home care service package which was available to clients. This approach included initial assessment and periodic reassessment of clients' service needs and of the home care-related service being received. It also included arranging for (contracting for) and monitoring the actual provision of services.
- (2) To consolidate the delivery of services into a single agency, combining case management and service coordination within the same organizational structure as the provision of direct services (HMO model).
- (3) To control directly client access to and utilization of institutional services. For those clients for whom institutional care was deemed appropriate, the intensity of the case management process was greatly reduced after initial assessment, certification of level of care, and recommendation of locus of care. Clients resolved to the community, however, received intensive case management services on an ongoing basis.

Among the demonstration projects included in this special study, the primary emphasis of each project's intervention was the following:

- upgrade the home care package available to clients:
 - New York City Home Care Project,
 - Long-Term Care Project of North San Diego County,
 - Project OPEN;
- consolidate service delivery into a single agency:
 - On Lok;
- control client access to and utilization of institutional services:

--South Carolina Community Long-Term Care Project.

Differences in intervention approach were expected to be reflected in significant variation in per-client costs. The relative complexity of case management services provided to each client in those projects with a goal of upgrading (and thus monitoring) home care-related services (New York City HCP, San Diego LTCP, and Project OPEN) was expected to result in relatively high per-client per-month costs. In these projects, the level of interaction between case management staff and clients was high; each client received numerous home visits for assessment and reassessment, and staff sometimes became involved in providing direct assistance to clients, such as delivering prescription medications when it was impossible for the home health aide to do so.

The South Carolina project's approach was expected to result in the lowest per-client per-month costs. Because of the relatively limited amount of staff time expended on behalf of those treatment group clients who were institutionalized through contact with the project, costs associated with case management for community clients would be offset.

On Lok was initially expected to fall between the two extreme cost levels described above. Though the average amount of individual staff time spent with clients was high relative to that in the South Carolina project, coordination and monitoring of services was expected to be a relative easy task, since service providers were within the same organization and thus easily accessible. Relatively little case management staff time needed to be devoted to these activities, by contrast with projects such as New York, where contracts with service providers often needed to be negotiated or renegotiated and monitored carefully. However, two factors made the initial estimation of On Lok's relative cost level difficult. First, the project was staffed almost exclusively with persons who had a high level of education or training. Second, it was difficult for staff to distinguish case management and coordination activities from other client-centered activities including service provision. For these reasons, it is not surprising that the final per-client per-month cost estimate for On Lok was higher than originally estimated.

Another difference among projects with particular implications for case management cost findings was the level of professionalization and the specialization of functions among the staff who carried out case management activities.⁷ Professionalization refers to the type and level of education, training, or certification possessed by persons performing case management tasks. Specialization refers to the organizational roles of case management staff. More "specialized" projects used different persons (or teams) for different case management tasks, so that an individual client was in contact with several different project staff persons. In less specialized projects, an individual staff person performed all or nearly all case management functions for a particular client (casework model). The five projects were characterized as shown in Table 1. Again, the hypothesis was that higher degrees of professionalization and more specialization would lead to increased cost levels because of (1) higher salaries for individual staff persons, and (2) some duplication or increased coordination of activities among staff persons working on behalf of a single client.

Analysis of Accounting Systems

A thorough review of the accounting systems and cost categories in each project site was conducted through site visits, discussions with accounting managers, and examination of accounting documents, worksheets and cost reports by a certified public accountant specializing in medical care financing. The definition of replication-relevant costs was reviewed with accounting managers and program administrators at each site in order to determine what cost categories and what staff activities should be included as production costs. It was also important to ensure comparability of costs across projects by adjusting for differences in depreciation policies and the recognition of in-kind contributions of goods and services.

Method of Accounting

BPA made no adjustments for differences between cash and accrual methods of accounting; all sites except one (CASC in New York City during part of the time period chosen) utilized accrual, and it was

Table 1

Staffing Patterns in Projects Studied

Level of Professionalization ^a	Degree of Specialization of Case Management Tasks ^b	
	More Specialized	Less Specialized
Higher Level	San Diego LTCP On Lok	Project OPEN
Lower Level	New York City HCP	South Carolina CLTCP

^aThis distinction was based on the percentage of project staff with specialized education or training at or beyond the Bachelor's Degree and directly related to case management activities. Those projects where more than 70% of staff had advanced or specialized degrees were classified as higher-level.

^bProjects were classified as more specialized if several staff positions include responsibility for specialized case management functions, so that no single person had the sole case management responsibility for a given client. In less specialized projects, a client was seen primarily by a single case worker who performed all case management functions with the exception of screening and intake.

decided that this difference did not materially affect comparability of costs. This decision was made for the following reasons:

- the cost centers which account for the vast majority of project costs -- personnel and rent -- did not exhibit significant lags between the date an obligation was incurred and the date of actual payment; and
- the time periods for analysis were carefully chosen to represent a stable point in each project's history, so that month-to-month variations would not be significant.

Treatment of In-Kind Donations

In-kind donations were not included in the calculation of case management costs. In many projects, the dollar value of those donations was difficult or impossible to ascertain. Thus, to perform the calculation for some projects and not others would have resulted in noncomparable cost estimates. For those projects that were able to provide verified estimates of the in-kind donation value, separate calculation of case management costs appears in footnote form.

Choices of Time Periods for Analysis

The choice of time period for analysis was a separate decision for each project, based on what BPA had learned about each project's history and operation. For simplicity, the demonstration cycle was divided into three stages:⁸

- (1) Start-up or pre-operational: During this period, the funded proposal was implemented and organizational decisions made. Staff were recruited and trained and operating procedures developed in more detail. Relationships with sponsoring organizations, HCFA, and the local health and social services networks were worked out. These were gradual processes with nonrepresentative start-up costs.
- (2) Operational: Services were initiated for a defined group of clients. Outreach, intake, and assessment activities were at first the exclusive focus of staff

effort, complicated by efforts to establish relationships with service providers and to work out problems with staffing. In the latter phases of the operational period, staff and the organization of their roles and case management responsibilities became more stable, and the projects arrived at a full caseload.

- (3) Termination: Arrangements began for transferring some clients to other programs or making alternate arrangements for care. Intake functions ceased, and a planned sequence of termination activities was undertaken.

The task of defining a "mature" organization for purposes of estimating representative operating costs required selection of a time period during the operational phase of each project when the project was operating at peak efficiency and performing its full set of functions with all staff. Actual criteria for defining these time periods included:

- assessment, reassessment, and care planning instruments were developed and fully stable, with no major changes which would add to or change the time required for completing them;
- case management structure and responsibilities had settled into stable patterns, with roles fully defined;
- all assessment, case management, and care planning procedures had been worked out;
- no major changes in organizational procedures were occurring;
- all staff were on board, and turnover was not a source of major disruption or excess cost (this criterion was difficult to achieve for some sites);
- staff had worked with a sufficient volume of clients so that daily activities had become routinized and efficient performance had been achieved. Most or all staff had developed their job skills, were familiar with operating procedures, had developed a set of referral contacts in the local area, and had served a variety of clients;

- there were no work stoppages or peculiar circumstances which would affect staffing and thus cost structure; and
- the project had achieved a mature caseload (active clients receiving the full range of project services) with a mix of intake and ongoing case management activity, though project staff were not devoting exclusive attention to intake activities, as they had been during the early operational period.

These factors were analyzed and discussed with project staff for each of the five projects in order to determine the most appropriate months for inclusion in the cost calculation.⁹ The timing of major changes in staff and workload was ascertained, and the following time periods for calculating costs were chosen. These time periods are shown in Table 2.

The reasons for the specific time periods selected for each project are discussed in more detail in the subsequent sections covering each of the projects on an individual basis.

Determination of Which Costs Should be Included

Once the time period was selected, BPA interviewed each of the project directors and some project staff in order to understand the operation of the case management function within the project. During these interviews, the major focus was on understanding thoroughly what services were being provided and who was providing them. The time period selected was reviewed to ensure that it was appropriate to the intended purposes. Case workers were also asked to describe typical client processing profiles from the time various types of clients found out about the program until termination.

Agreements were developed with each project as to methods for determining the amount of staff time to be included as replication relevant. Usually this determination was based on a combination of (1) formal staff time allocation studies conducted for each project by BPA or by the project itself, and (2) the estimates of project administra-

Table 2

Time Periods Utilized for Cost Analysis

Project	Time Period
<u>New York City Home Care Project:</u>	
Jamaica Service Program for Older Adults (Queens)	May 1, 1982-December 31,1982
Comprehensive Family Care Center (Bronx)	January 1,1982-December 31, 1982
Community Agency for Senior Citizens (Staten Island)	August 1, 1981-July 31, 1982
Sunset Park Family Health Center (Brooklyn)	January 1, 1982-December 31,1982
<u>San Diego LTCP</u>	November 1, 1981-June 30, 1982
<u>Project OPEN</u>	June 1, 1981-May 31, 1982
<u>South Carolina CLTCP</u>	August 1, 1982-January 31,1983
<u>On Lok</u>	July 1, 1982 December 31, 1982

tors and other staff regarding the amount of time spent in nonreplication-relevant research and demonstration administration. BPA relied principally upon the latter estimates, for two reasons:

- these were overall estimates based upon staff judgment of normal or representative levels of effort, rather than based on sample weeks which may not always have been representative of the time periods chosen for cost analysis; and
- these estimates were based on a mutual understanding between BPA and project staff of replication-relevant costs (and activities) and thus took into account administrative activities such as staff meetings, training, reporting, and community coordination which would be present in any replication, but which were not included in the strict definition of case management activities that was used in staff time allocation studies.

For each project, BPA and project staff agreed upon a final estimate of the percentage of time spent in replication-relevant activities. The specific methods for arriving at these estimates varied somewhat from project to project. For the San Diego LTCF, BPA used the formal records maintained by the accounting department and based on each staff person's weekly reports of how his or her time was used. For On Lok, a special time allocation questionnaire was administered as part of this study. For South Carolina's CLTCF and the New York HCP, the project directors provided estimates of staff time utilization. Project OPEN estimates were based on interviews for case management staff and were projected from 1983 time use patterns for support staff. Once these percentages were agreed upon for each project, they were multiplied by the total monthly cost to arrive at a monthly replication-relevant cost. This cost figure was then divided by the average number of active clients per month. This calculation resulted in a per-client per-month cost which was judged comparable across the five demonstration projects studied, even though differences in case management and coordination

practices from project to project led to wide variation in cost findings.

Collection of Specific Cost Information

At the same time that BPA visited each project site in order to learn about overall accounting systems and procedures and to ensure that costs would be comparable across projects, BPA also collected cost reports, accounting worksheets, and budgets. In this way, it was possible to have in advance for each project site several important information items:

- the applicable accounting periods (fiscal year, quarters, months);
- the types of information reported or computed for different accounting periods;
- the major cost categories being used (salaries, fringe benefits, other direct costs, administrative overhead, etc.); and
- the specific cost items that were included within each cost category.

With an understanding of how each project operated and an agreement on the appropriate time period, BPA then proceeded to collect actual expenditure information through a combination of in-person visits and reports, transmitted by telephone or by mail. The costs fell into two very distinct categories. First were costs that were clearly attributable in whole to case management (for example, the salary of a person who did nothing but case management activities). Second were costs that needed to be allocated only in part to case management (for example, the time of the executive director that was related to case management or general administration). Ascribing dollar values for the first type of costs was relatively straightforward; the total cost was recorded as one of the costs of case management. Determining costs for the second category was more difficult. In these cases, the cost allocation was based on knowledge of the program combined with discussions with appropriate staff. For example, in order to allocate each executive

director's time, BPA asked the director whether it was fair to allocate his or her salary based on the number of full-time equivalent staff involved in case management relative to total staff. So, if there were eight case managers, one nurse, and one bookkeeper (ten total persons) and a research staff of five, it would be initially proposed that 66.7% (10/15) of the director's salary be allocated toward case management. The response of the executive director to this type of "fair share" allocation model might be that the proposed approach seemed reasonable and fair or the director might adjust the "fair share" percentage because he/she felt more or less of his or her time than average was spent on case management-related activities.

In many projects, the same staff performed both case management and research-related tasks. These staff recorded the amount of time devoted to various case management tasks during sample weeks, in special time allocation studies. The results of these studies were taken into account in determining the percentage of time devoted to case management. However, these results were often weighed along with other factors, since time study results were not always comparable from project to project.

Once it was determined how common costs should be allocated, BPA applied "fair share" formulas to the various cost centers. In general, the cost centers were as follows:

- salaries of case management direct service providers;
- salaries of administrators and executive directors (allocated) needed to oversee case management activities;
- salaries of support staff (bookkeeping, secretarial, etc.) needed to support case management activities;
- fringes on above salaries;
- physical plant costs (space, telephone, utilities, supplies) needed to support all of the above; and
- out-of-pocket expenses for case management (travel, car rental, etc.).

By applying the fair share formulas where necessary to the cost centers and adding direct costs, the cost of providing case management services was calculated. In those instances where case managers also performed

non-case-management activities, their case management time and other associated costs were allocated accordingly.

Finally, projects were asked to report the number of clients served during the time period selected, defined as the number of active clients on board at the end of each month during this time period. Once this was accomplished, BPA divided the average monthly number of clients served into the total case management cost to arrive at a case management cost per client per month.

FINDINGS FOR EACH PROJECT

In the sections which follow, results for each project are presented, both in terms of the design of the overall case management process and with respect to particular cost findings.

New York City Home Care Project

New York City's Home Care Project was jointly funded by the Administration on Aging and by the Health Care Financing Administration. Thus, a calculation of project costs necessitated examination of expenditure reports to both funding agencies, as well as internal records or estimates of the value of in-kind contributions by the sponsoring agency, the New York City Department for the Aging. Services were delivered at four sites, each located in a separate borough of New York City. The four sites were the following:

- Jamaica Service Project for Older Americans (JSPOA) in Queens;
- Community Agency for Senior Citizens (CASC) on Staten Island;
- Comprehensive Family Care Center (CFCC) at the Albert Einstein College of Medicine in the Bronx; and
- Sunset Park Family Health Center (SPFHC) at the Lutheran Medical Center in Brooklyn.

The four sites were similar in their staffing structure: each utilized an assessment/care planning team consisting of one nurse and one social worker; each had two case managers, support staff, and a part-time site physician.

The amount of support staff services available to the case management teams varied across the four New York City project sites. The availability of support staff also varied over time in some of the sites; JSPOA experienced a support staff shortage during the time period chosen for cost analysis. Support staff time was considered important in calculating replication-relevant costs. Support staff not only assisted in the initial intake process, but also performed general

administrative tasks that would have to be included in any such project. The extent of involvement of the site physicians in the case management process also varied on a case-by-case basis, depending on the state of health of each client and the relative importance of his or her medical needs in the care planning process. For simplicity, it was assumed that the same percentage time allocation should be used to calculate costs for support staff and physicians as for the remainder of the project team. Staff persons at each site concurred that no more accurate basis for allocating their time could be devised.

In two of the four project sites (CFCC and JSPOA), one staff person also served as Project Coordinator; at the other two, the project was coordinated by a staff person within the sponsoring agency, part of whose time was donated to the project by the agency. The duties of the two part-time "donated" project coordinators were somewhat removed from the case management process itself. However, part of their time was included as a replication-relevant production cost. The percentage time to be included in each case was decided upon through discussions of the definition of replication-relevant costs, resulting in an estimate of how much of the project coordinator's time was spent in general administration, as opposed to special activities (both research and administration) attributable to the demonstration nature of the project.

One other important difference in the structure of the projects across the four sites had important implications for the cost findings. Two of the project sites (CASC and JSPOA) were housed within social service agencies which provide a wide range of services to aging clients; the other two were within medical settings -- a hospital and a medical center. It was expected, and it turned out to be true, that those sites housed within medical settings would have higher overhead costs, and thus higher average costs overall, than the sites based in social service settings.

The structure of the case management process was similar across the four sites; ideally the nurse and social worker performed the initial assessment and care planning processes jointly. However, in many instances, the two had to schedule separate visits to the same client because of difficulty coordinating schedules. Each was responsible for

gathering a certain set of information about each client. Care planning was performed jointly by the nurse and the social worker, and responsibility was then given to the case manager for arranging specific services and for monitoring ongoing services to each client. In one of the sites, case management tasks were divided by type of service, so that each case manager was in touch with all clients, but was only in touch with some service providers. In the other two sites, a more traditional casework model was adopted, with each case manager having a defined caseload for whom he or she arranged and monitored all services. The remaining site utilized an approach which combined elements of the other two approaches.

In order to arrive at comparable time periods for examining case management costs, BPA examined carefully the history of operations at each site, following the criteria listed above in the Methodology section. The most difficult factors to account for were staff turnover and vacancies, though there were also differences in the intake periods among the four separate sites. Time periods for each site were chosen in order to minimize the periods when the social worker or nurse positions were vacant.

In order to calculate replication-relevant costs for each project site, BPA relied principally on interviews with project staff persons. Some of these persons had already completed detailed time allocation studies documenting for several sample weeks the number of hours per day spent on four specific types of case management activity: assessment/reassessment, care planning, ongoing case management, and other client-related activities. The results of these studies were useful as general indicators of the level of case management activity within each job category. However, these studies did not include all staff persons. They also did not measure the amount of time spent in the general administrative tasks, such as staff meetings, routine reporting, and correspondence, which are included in the definition of replication-relevant activities. Therefore, it was important to discuss with project directors and staff the definition of replication-relevant activities and to obtain their estimates of the amount of time spent

performing these activities as distinct from demonstration-related research and administration.

Jamaica Service Program for Older Adults (JSPOA)

The choice of a time period for analyzing costs in JSPOA created some difficulties. JSPOA experienced a period of high turnover during late 1981 and a prolonged vacancy in the social worker position that lasted until March 1982. During that same period of time, turnover and problems in filling the position of secretary meant that staff were handling more paperwork than was typical. During the first four months of 1982, caseload increased rapidly. For these reasons, the last eight months of 1982 were seen as the period of greatest stability from both staffing and caseload viewpoints. Even that period included a two-month period when the social worker position was vacant; however, there were few enough initial assessments occurring during that period (May 1982 and following) that the disruption in workload was not severe. However, the staff vacancies did have the effect of decreasing costs at this demonstration site to a level below the average observed for the other three New York City HCP sites.

Estimated expenditures during that eight-month period are shown in Table 3. The average monthly total expenditures were calculated at \$9,598.75. Based on the average monthly caseload of 96.8, per-client per-month total expenditures were \$99.16. Approximately 80% of staff time was devoted to case management and related activities; thus, the monthly per-client case management cost was \$79.32.

Community Agency for Senior Citizens (CASC)

The time period chosen for this site reflected a 12-month period (August 1, 1981 through July 31, 1982) when there were no vacancies in case management positions. There was a vacancy in the coordinator position for nearly two months, but the relatively low involvement of the coordinator in case management meant that the effect on this cost study was minor. The coordinator's salary (at 20% time) was an in-kind donation from CASC, and thus did not appear in the project's budget. However, half of that salary was included here as a replication-

Table 3

Summary of Costs
Jamaica Service Program for Older Adults

May 1, 1982 - December 31, 1982

Cost Category	Amount	% of Total
Salaries	\$ 53,605	69.6%
Fringe benefits	9,573	12.5
Travel	1,345	1.8
Printing	510	0.7
Supplies	645	0.8
Postage	201	0.2
Telephone	1,748	2.3
Rent	1,384	1.8
Professional Services	7,151	9.3
Miscellaneous	628	0.8
Total	\$ 76,790	100.0%

relevant cost, representing an "indirect" case management cost, or a level of supervision and overall administration that would have to be included in any replication effort. Similar reasoning was followed in the other three New York City sites, where similar agreements with the sponsoring agency were in effect. However, the percentage of time used for determining production costs varied with the level of activity of the "donated" staff person -- from almost none in sites where a project staff person performed most administrative functions, to about half where the coordination function was separated from the case management function.

Estimated total expenditures for the time period August 1, 1981 through July 31, 1982 are shown in Table 4. Total expenditures for those 12 months were \$121,129. The average monthly expenditures were thus \$10,094.08. Based upon the 91.9 average active caseload, the average per-client monthly expenditures were \$109.83. Project staff estimated that 88% of their time was devoted to case management activities; thus the monthly per-client case management cost was calculated at \$96.76.

Comprehensive Family Care Center (CFCC)

At this site, staffing was relatively stable during the full year chosen for analysis (January 1, 1982 through December 31, 1982), though the social worker and one case manager were absent for about one month each. The active caseload was likewise stable, with an average of 98.9 clients per month. Expenditures during this time period were those presented in Table 5. Average monthly expenditures were \$12,555.00, and thus (based on 98.9 caseload) \$126.94 per client. Staff estimated that 81% of their time was spent on case management-related activities, and so the monthly per-client case management cost was \$102.82.

Sunset Park Family Health Center (SPFHC)

The recommended time period for this site was from January 1, 1982 through December 31, 1982. Between March and June of that year, the social worker position was vacant, and there was no nurse during February and March. Consequently, the summer period was one of concentrated

Table 4

Summary of Costs
Community Agency for Senior Citizens

August 1, 1981 - July 31, 1982

<u>Cost Category</u>	<u>Amount</u>	<u>% of Total</u>
Salaries	\$ 84,107	69.4%
Fringe benefits	25,980	21.4
Travel	1,008	0.8
Printing and supplies	1,712	1.5
Postage and telephone	2,115	1.8
Rent (includes other overhead items)	6,207	5.1
Total	\$121,129	100.0%

Table 5

Summary of Costs
Comprehensive Family Care Center

January 1, 1982 - December 31, 1982

Cost Category	Amount	% of Total
Salaries	\$109,091	71.9%
Fringe benefits	25,637	16.9
Travel	540	0.4
Overhead: ¹¹		
Communications	3,113	2.7
Rent	9,431	6.2
Supplies/printing/other	2,848	1.9
Total	\$150,660	100.0%

reassessment activity. Still, this time period is seen as representative of the project's staffing level as a whole, and includes a period of intake during the beginning of the year and a relatively stable average caseload of approximately 93 clients.

Expenditures for the 1982 year as shown in Table 6. The total of \$143,698 yields an average monthly expenditure of \$11,974.83. The average active caseload was 93.3; therefore, the average per-month total cost was \$128.35 per client. It is estimated that 82% of staff time was spent on case management activities, so that the monthly per-client case management cost was \$105.25.

Summary of New York City Project Costs

There was considerable variation among the four New York sites in their monthly per-client case management costs. The cost findings are shown in Table 7. The most striking differences among these cost levels are between the two medically-based projects (in Brooklyn and the Bronx) and the two social service-based projects (Staten Island and Queens). These differences are attributable in part to differences in per-month staff costs (approximately \$9,000 in the former sites as compared to approximately \$7,000 in the latter two) and estimated staff time devoted to non-case-management activities. One project director attributed this difference to the medical emphasis of the projects and their decisions to hire nurses with relatively strong credentials. However, differences in the level of clerical support within the projects also accounted for part of the variation in staff costs.

Long-Term Care Project of North San Diego County

Background on the Project

The Long-Term Care Project of North San Diego County (LTCP) was designed as a broker of Medicare-waivered community-based services, serving the "at risk" aging population of the northern part of the county. Initiated and sponsored by Allied Home Health Association, a Medicare-certified California-licensed home health care agency, the LTCP set as a major goal the provision of comprehensive coordinated care for its aging clients, while containing costs and improving quality of care.

Table 6

Summary of Costs
Sunset Park Family Health Center

January 1, 1982 - December 31, 1982

<u>Cost Category</u>	<u>Amount</u>	<u>% of Total</u>
Salaries	\$111,544	77.6%
Fringe Benefits	24,939	17.4
Travel	1,200	0.8
Postage and communications	750	0.5
Printing and supplies	1,725	0.2
Overhead (includes rent, main- tenance, security, insurance, etc.)	3,540	2.5
Total	\$143,698	100.0%

Table 7

Summary of Costs
New York City Home Care Project

Project Site	Per-Client Per-Month Cost
Sunset Park (Brooklyn)	\$105.25
CFCC (Bronx)	102.82
CASC (Staten Island)	96.76
JSPOA (Queens)	79.32
Average Cost of the Four New York City HCP Sites	\$ 96.04

Furthermore, the project intended to demonstrate the compatibility of the goals of providers and clients (cost-effective, quality care, based upon a humanistic value system) and those of third-party payors (cost control).

The project provided multi-disciplinary assessment and case management for its clients. Six other waived services were provided through contracts with community service providers. According to the project's grant application, LTCP particularly sought to improve the following conditions surrounding community-based long-term care:

- lack of a unified system existing locally to provide an integrated, comprehensive, and coordinated package of health-related and supportive social services in the home;
- lack of a centralized information and referral system for home-health-related services;
- fragmentation of services at the local level due to the categorical nature of existing programs providing services in the home;
- lack of a local coordinated mechanism among providers of health care and supportive social services in the home and between such providers and other providers of health services creating community problems; and
- under-utilization of potential community resources.

Therefore, the project's overriding purpose was to make a comparison between client benefit and total costs of care within the existing incomplete, fragmented array of services for the aging. The demonstration project provided a comprehensive, coordinated system of long-term care for approximately 500 Medicare beneficiaries 65 years and older who have long-term or permanent physical disability and/or chronic illness. In addition, another approximately 250 individuals who met the same intake criteria as the project clients served as a control group, though they received services only through the traditional service system.

The case management process in the San Diego LTCP consisted of the following steps:

- intake consisted of gathering basic information, usually over the telephone by the intake workers;
- preassessment occurred during a home visit by the nurse practitioner and served to verify eligibility and to place clients in control or treatment groups. This visit only occurred after M.D. approval;
- a comprehensive initial assessment required three separate in-home interviews: one by the occupational therapist, one by the service coordinator, and a third interview by the nurse practitioner;
- this same team participated in a case conference, after each had thoroughly researched the needs and resources available to the new client and written case summaries. The resulting treatment plan was given to the physician and to service providers. Service providers also received a "request for provider services," a master problem/plan list, and a lesson plan;
- the service coordinator maintained contact with clients and service providers and monitored services; and
- reassessments occurred at three-month intervals or at any time the service coordinator noted major changes in the client's situation which required close monitoring or consideration of changes in service arrangements.

Costs of Case Management

The time period of November 1, 1981 - June 30, 1982 was one of relatively stable staffing: five nurse practitioners, two occupational therapists, and (for most of that time period) 11 service coordinators, in addition to administrative and clerical support staff. One-half of that time period was a period of active intake, during which there were three intake workers. As the intake period ended and the project's caseload stabilized (without replacement), the number of intake workers declined to one.

Time allocation studies were performed by staff, both directly for BPA and in order to separate their own costs for accounting purposes.

BPA relied largely on these time studies in determining the costs of case management. When reporting their time worked during each pay period, all project staff routinely separated their time between research-related time and time devoted to case management and administrative activities. The project's payroll and accounting records were divided into these two distinct categories. BPA carefully reviewed the definitions used in separating out the time spent on research activities with both project staff and accounting staff, and concurred that these definitions corresponded to the measure of replication-relevant activities used in this study. Thus, BPA was able to use directly the figures supplied by accounting staff in calculating costs.

Expenditures during the eight-month time period studied were as shown in Table 8. The average monthly expenditures were \$52,517.58, divided by the average monthly caseload of 392.9 to arrive at a per-client per-month case management cost of \$133.67. It is estimated that the per-client per-month costs during the final months of 1981 were about \$208, but that during the first six months of 1982, costs declined to about \$103 per client/month. The difference is attributable to the dramatic increase in client volume and the cessation of initial intake and assessment in the early months of 1982.

The \$133.67 cost figure was higher than most of the projects studied. This was expected, since San Diego LTCP staff included a high percentage of persons with specialized advanced degrees and credentials. In addition, the model of case management used at the San Diego LTCP was extremely labor intensive. It included numerous home visits to clients over a relatively widespread geographic area, and required that several case management activities be performed by a team of professionals.

Project OPEN

Background on the Project

Project OPEN was designed to improve the aged's effective utilization of community-based services through the provision of comprehensive case management and the use of Medicare service waivers. Located at Mount Zion Hospital, a major teaching and gerontological medical center in San Francisco, the project was the product of a formal consortium of

Table 8

Summary of Costs
LTCP of North San Diego County

November 1, 1981 - June 30, 1982

Cost Category	Amount	% of Total
Salaries	\$278,343	66.2%
Fringe benefits	43,111	10.3
Other personnel	9,991	2.4
Travel	11,466	2.7
Overhead (including rent, depreciation, utilities, taxes, and maintenance)	43,105	10.3
Other costs (including tele- phone, computer, equipment, reproduction, printing, supplies and postage)	34,124	8.1
Total	\$420,141	100.0%

local health and social service agencies which provided a wide range of services to a cross-section of the city's aged population.

Project OPEN's case management process was the following:

- A referral called the project and was determined to meet the basic eligibility requirements -- age, residence within the catchment area, Medicare A and B coverage, and need for assistance in order to function independently.
- The client was randomly assigned to the control or demonstration group by the research assistant and was assigned to an interviewer (for control clients) or a service coordinator.
- The coordinator (or interviewer) met with the client to verify eligibility and proceeded with the assessment. A comprehensive functional status indicator instrument covered health, mental functioning, activities of daily living, and environmental factors. Appropriateness for the project -- existence of a specific problem, a need for assistance to live independently -- was determined.
- A case summary was presented to the interdisciplinary case conference team: nurse or social worker, one or more physicians, and other health professionals on an as-needed basis. This team jointly determined the care plan for each client.
- The service coordinators then chose care providers based on the level of client need, geographical availability, and skill level and cost of the needed care.
- The care plan was presented to demonstration clients (care plans were developed for control clients for research purposes only). Once the client approved the care plan, he or she was formally accepted into the project.
- The plan was implemented and monitored by the service coordinator, relying on informal caregivers and contract providers. Monthly reports from contract providers, and frequent contact with clients and caregivers were used to

verify the appropriateness and quality of services.

- Care plans were modified whenever the coordinator became aware of a changing need, whether through six-month reassessment or through ongoing service monitoring.
- Finally, service coordinators were responsible for documenting all changes in clients' status, including new service plans or termination from the project.

Costs of Case Management

Conversations with the project director, the research director, and accounting staff suggested that July 1, 1981 through June 30, 1982 reflected the best period to examine project costs. This period represented a time when the program was in full operation. Costs for case management during this period are summarized in Table 9.

The salary figure for case management staff represents 98% of their full salary. While this figure differed from the figure used by the project in its own estimates of case management costs, the BPA cost estimate was in keeping with the definition of replication-relevant activities as defined in the Methodology section above. It was consistent with the definition used for the remaining projects in which costs were analyzed. This figure was derived by taking the actual FY 1982 salary figures for the project (based on 63% of total salary) and inflating the figure to equal 98% of total salary. It was determined through interviews that 2% of the case managers' time was spent on non-replication-relevant activities.

Support personnel salary was not included as a separate cost category in FY 1982. Support salaries include the salaries of staff other than case managers (including the director, bookkeeper, receptionist, and secretary) who were engaged in necessary administrative activities. These salaries were adjusted for the amount of time spent on case-management-related activities. Because no figure was available for FY 1982, BPA calculated the ratio of support salaries to case manager salaries in FY 1983 (when the needed records were kept) and applied this ratio to the FY 1982 figures. Approximately \$0.66 of support salaries and fringes were spent for every dollar of case management time.

Table 9

Summary of Costs
Project OPEN

July 1, 1981 - June 30, 1982

Cost Category	Amount	% of Total
Salaries of Case Management		
Staff (including fringes)	\$135,453	49.9%
Salaries of Support Personnel (including fringes)	88,952	32.7
Overhead:	46,903	17.3
(Depreciation \$ 3,518 - 1.3%)		
(Insurance 141 - 0.05%)		
(Interest 1,824 - 0.6%)		
(Employee benefits 8,771 - 3.2%)		
(Telephone 6,051 - 2.2%)		
(Accounting and Hos- pital Administration 5,441 - 2.1%)		
(Plant 891 - 0.3%)		
(Plant Operations 3,940 - 1.5%)		
(Housekeeping 4,081 - 1.5%)		
(Cafeteria 12,335 - 4.5%)		
Staff Travel	336	0.1
Total	\$271,644	100.0%

Project OPEN had no direct overhead charge or direct expenses. These costs were determined by the overall hospital accounting department of which Project OPEN represented only one of many activities operating within the hospital. The figure for this study was derived by using the actual charges applied against FY 1982 and expanding them to cover the additional case management and support salaries. The hospital, although charging directly for expenses under a complicated cost allocation system, charged an overhead rate of 20.9% on salaries. The staff travel figure was based on average monthly staff travel expenses for FY 1983 as no records were available for FY 1982.

The project maintained an average caseload of 194 clients per month during the FY 1982 accounting period. Based on total costs of \$271,644 for FY 1982 and a total of 2,325 client months, it cost Project OPEN \$116.84 per client per month to provide case management and coordination services.

The cost figures calculated by BPA differed from the project's own estimates, as reflected in Project OPEN's final report to HCFA. The project's estimate of \$36.72 per client per month as presented in that report included only direct (salary and fringe benefit) costs. If program and indirect costs had been included, the project's cost estimate would have been \$94.91 per client per month. The difference between this figure and BPA's cost estimates of \$116.84 may have been attributable to three primary factors:

- BPA chose a 12-month period for measuring costs that was designed to reflect ongoing operations in a project, so that the cost estimate would be representative of operating costs in a long-range replication of the project. The project's cost estimates were based on 34.5 months of operation, which included nonrepresentative start-up and phase-down staffing patterns.
- Since the necessary cost breakouts for 1982 were not available, BPA estimated some cost categories using 1983 data.
- Project OPEN relied on optimal caseload (200) to calculate its costs per month per client, while BPA used the

actual average monthly figure (193.75) to calculate costs. This difference accounted for one-sixth of the cost discrepancy.

Community Long Term Care - South Carolina

Background on the Project

The Community Long-Term Care Project (CLTCP) was a Medicaid waiver project sponsored by the South Carolina Department of Social Services (DSS), the state's Medicaid agency. The CLTCP served a three-county region in the northwestern section of the state. The overall goal of the CLTCP was to provide a model of controlling access to and use of institutional long-term care services in order to contain public expenditures for nursing home care. The primary means of achieving this goal was to combine an assessment and preadmission screening process with service planning, service management, and addition of new community-based services. From the outset, the CLTCP was seen as a vehicle for testing a long-term care program that could be implemented statewide.

The service management teams at CLTCP were central to the total service planning and delivery function. These teams, each consisting of one nurse, one social worker and one or two caseworkers, were responsible for all service management activities, including assessment, reassessment, service planning, service authorization, and case management. "Service management," the CLTCP term for the comprehensive case management process, was designed to address the needs of clients assigned to the experimental group, and to permit clients to use the long-term care network appropriately, supporting them in remaining as independent as possible. The service management process consisted of the following basic steps:

- intake, which included telephone screening to determine whether the client met intake criteria, an explanation of the project to the client and/or a responsible caregiver, and an appointment for the initial assessment;
- the initial assessment, which involved a structured interview by a member of the service management team to

- gather information on the client's health status, functioning, and social supports;
- determination of the appropriate level of care, made by the full service management team after consulting with the client's physician;
 - random assignment to experimental or control group;
 - recommendation of locus of care, made by the full service team for both control and experimental groups and based on the client's health, available supports, and preferences, as well as the doctor's recommendations and the availability and cost of services needed if the client was to remain in the community;
 - formal service planning for experimental clients (controls were referred back to the original referral source) which was performed jointly by the nurse and the social worker based on all information gathered;
 - service delivery, consisting of telephone contact with service providers, followed by written authorization for specific services;
 - service monitoring through contact with the client and/or the service provider at least monthly, though more frequent contact was often required;
 - reassessment at three months, six months, and every six months thereafter; this was part of the service management process for experimental clients, while for control group members it was a research activity;
 - termination from the project; and
 - formal case review for a random sample of cases as a quality assurance step.

Of the 13 persons involved in working with clients through level of care determination, only eight were part of two-person social worker/nurse teams that provided case management services to the experimental group. By BPA's definition of case management, the only costs considered were those related to the services given by these eight persons

who were engaged in case management. The other five persons worked with a given control group only until a level of care was determined. Other than referring the client back to the original referral source, the project provided no further services to control group clients.

Costs of Case Management

BPA's assessment of project records and conversations with the CLTCP project director suggested that the six-month period beginning August 1, 1982 and ending January 31, 1983 was the most appropriate time period for collecting cost information. Not only was the cost information relatively current for this period, but the program was operating at a desirable and stabilized level of service.

Costs accumulated for this six-month period are presented in Table 10. The salary figure represented actual salaries of the eight case managers, the Area Director, and one data entry clerk over the six-month accounting period. Fringe benefits were figured at the South Carolina approved rate for this project, plus health insurance. Travel expenses represented actual costs. All physical overhead costs, with the exception of long-distance telephone, were calculated based on a ratio of eight case management staff divided by total staff. This percentage was then applied to total costs to determine a fair-share percentage of the costs for case management. Long distance charges represent actual costs for contacting case management clients. Administrative support, which included the director's time, secretarial time, bookkeeping and accounting time, and all other overhead related costs, was determined using the state-approved indirect cost rate. The South Carolina CLTCP project director verified that this was an accurate estimate of these costs.

The total of \$120,159 represented an average monthly expenditure of \$20,027. The project had an average monthly experimental caseload of 625. Based on the above figures during the six months studied, it cost South Carolina \$32.04 per client per month to provide case management services. If only the noninstitutionalized cases were considered to be "active" cases, the average monthly experimental caseload was 425, and thus per-client-per-month costs were increased to \$47.12.

Table 10

Summary of Costs
South Carolina CLTCP

August 1, 1982 - January 31, 1983

Cost Category	Amount	% of Total
Salaries of case management staff	\$86,339	71.9%
Fringe benefits	15,667	13.0
Travel expenses	3,627	3.0
Physical overhead	4,148	3.5
Administrative overhead	10,378	8.6
Total	\$120,159	100.0%

These costs were considerably lower than the costs of case management found in the other four demonstration projects included in this study. This finding is primarily a result of the nature of the project (preadmission screening); the fact that the program operated in a relatively low wage area; the fact that a single staff person was responsible for gathering assessment data for a large number of clients and the fact that the number of services available in the catchment area was limited. In addition, nearly half of the project's treatment group clients were institutionalized and thus did not receive ongoing intensive case management services.

On-Lok Senior Health Services

Background on The Project

On Lok Senior Health Services is a freestanding, nonprofit, community-based organization serving the frail aged in the Chinatown-North Beach area of San Francisco. On Lok was the first and is now one of the very few programs in the United States experimenting with the "consolidated" model of long-term care and utilizing the service delivery and reimbursement principles of the health maintenance organization. On Lok's Community Care Organization for Dependent Adults (CCODA) received Medicare waivers from HCFA during the period February 1979 through October 1983. On Lok's CCODA served a frail aged population, all certified as eligible for skilled nursing care.

Case management at On Lok is provided by the Intake and Assessment (I & A) team. This multidisciplinary group is central to the operation of the CCODA program and is responsible for assessment, authorization, and provision of care to participants. The team is composed of health care professionals in the areas of medicine, nursing, social work, occupational, recreational and physical therapy, and nutrition, plus drivers and other health workers. Although On Lok does not designate a single "case manager," the social worker who initially evaluates the participant acts as that individual's counselor, advocate and case coordinator, both inside and outside the program.

Unlike the other four projects assessed in this study, On Lok had no distinct case management function separable from other project activ-

ities and services. Instead, case management activities were integrated into the service delivery process. Because case management functions were carried out by the service provider team, rather than by a designated case manager, BPA had to take a completely different approach to the On Lok project in order to collect and analyze case management costs.

In the other four projects analyzed, BPA determined the case management costs by collecting information on the number of staff who performed case management-related functions and, through conversations with appropriate project persons, on the level of activities necessary to support the case management function. After reviewing financial information, costs were ascribed to all of the direct case management and indirect support activities. From these data a case management cost per client was derived. In assessing On Lok's service and cost structure, BPA faced the problem of trying to determine case management costs when no one at the project was formally identified as a case manager.

Despite the fact that On Lok had no staff person whose job title was "case manager," case management functions were definitely being performed by On Lok staff. Thus, BPA's task was to help staff define the extent of case management activities that they performed. To do this, BPA provided to the research director of On Lok the written definition of case management and replication-relevant activities that had been used in discussions with staff at other projects. In conjunction with the research director, BPA developed a questionnaire to be administered to all staff persons who had been performing case management functions. The questionnaire required that staff estimate how many hours per month they worked and the number of hours they felt they spent performing a number of different activities. These activities encompassed the definition of case management used by BPA at all the projects included in this study.

The questionnaire was administered to almost every On Lok staff person involved directly in case management, as determined by On Lok research staff (44 out of a total staff of 210). Of the 44 questionnaires administered, 40 were returned. The research director estimated that the four persons who did not return the questionnaire also per-

formed some case management duties. BPA decided to ignore the costs associated with these four staff persons, since they were judged to be relatively minor, and proceeded with the costs analysis using the questionnaire responses actually obtained.

Costs of Case Management

When the questionnaires were returned, BPA discussed them with On Lok research staff, reviewing each one in detail to determine whether or not the responses seemed reasonable, based the research staff person's knowledge of the duties of each individual respondent. Through these discussions, BPA isolated several of the questionnaires which, in the opinion of On Lok research staff, did not properly reflect the actual case management time being spent by the staff members. After making minor adjustments in time use estimates to reflect these discussions with On Lok research staff, BPA obtained actual cost data from the accounting department in order to begin the actual calculation of case management and coordination costs.

The accounting department kept financial records by service area, and BPA obtained financial records by these service areas for the six-month period July 1, 1982 through December 31, 1982. The service areas included:

- general administration,
- transportation,
- social services,
- nutrition,
- nursing,
- medical care,
- therapy,
- support services,
- medical records,
- research and evaluation, and
- other.

Because the survey approach resulted in the collection of information from persons who, while performing case management activities, had

not been taken into consideration in the other projects examined by BPA, we eliminated any costs associated with these individuals. Thus, there are no case management costs from several service areas: transportation, medical care, medical records, research and evaluation, and other.

On Lok had already developed a procedure for allocating general administrative services across the remaining service areas. We asked if the allocation process represented a fair share when case management was considered and the accounting and research staff both felt that it did.

After collecting the overall financial information on each service area, BPA met with the accounting staff to determine how to classify project staff into service areas. BPA then obtained the salaries for each surveyed staff person. By knowing how project staff were classified, their salaries, and the average number of case management hours they worked each month, BPA was able to determine the percentage of salary cost, a separate accounting category within each service area, that was attributable to case management. Because of the variation in case management hours estimated by different individuals within the same area, BPA, with the concurrence of On Lok staff, eliminated the highest and lowest case management time estimates and instead used an average of hours per person within each service category. This had the effect of reducing slightly the percentage time allocated to case management. The time spent on case management within each service area after this adjustment was the following:

- social services - 37%,
- nutrition - 3%,
- nursing - 34%,
- therapy - 17%,
- support services (center) - 11%,
- support services (in-home) - 1%.

Based on BPA's experience in examining case management activities in other service delivery programs, and given the differences between the staffing patterns in On Lok as compared to other demonstration projects, these figures were judged to be well within a reasonable range.

The percentage figures cited above were used to allocate not only salary costs, but also all other costs relating to each service area. By multiplying this percentage against the costs, BPA arrived at a cost of case management by service area. The costs from all five service areas were added together to arrive at a total cost of case management.

Table 11 presents the total cost information for On Lok. The estimated case management cost for On Lok was \$143,887 for a six-month period, and the average monthly caseload was 295 persons. This results in a case management cost of \$81.29 per client per month. This figure is toward the lower end of the range of the projects surveyed. BPA project staff discussed thoroughly the approach and the preliminary results of the assessment of case management costs at On Lok, as compared to the other projects examined. In short, how reasonable and how comparable to costs in other projects were the cost results calculated for On Lok?

On Lok did use a more intensive case management process than did any other project visited. Case management decisions were often made through a group process rather than by a single individual. One would therefore expect that On Lok's case management costs would be somewhat higher than those observed in the other four projects studied which, in fact, was not the case. However, in examining the information collected, it is noted that there were a number of factors suggesting that the approach taken by BPA provided a conservative estimate of costs. First, BPA did not include any case management costs for four persons (or 10% of the staff) who did not respond to the survey but who were involved in case management activities. Second, BPA used the average time estimate by staff within each service area, which reduced case management costs by about \$10 per client per month. Third, there was disagreement among On Lok research staff and accounting staff concerning whether transportation and medical records service areas should be included within the calculation of case management costs. BPA decided to eliminate these areas from the cost analysis despite the disagreement, again reducing case management costs. Finally, an examination of the percentage of time being spent on case management across service areas is consistent with reasonable expectations. In sum, BPA believes

Table 11

Summary of Costs
On Lok Senior Health Services Project
Community Care Organization for Dependent Adults

July 1, 1982 - December 31, 1982

Service Area	Cost Category			Percent Judged Replication Relevant ^c	Replication- Relevant Costs
	Salary and Fringe	Nonsalary ^a	Overhead ^b		
Transportation	\$ 98,929	\$ 25,173	\$ 29,488	-0-	-0-
Social Services	92,748	433	20,121	36.8%	\$ 41,691
Nutrition	83,773	-7,048	55,225	3.4	4,442
Nursing	95,477	345	22,450	33.6	39,686
Medical	57,164	327,922	23,876	-0-	-0-
Therapy	102,313	5,159	51,059	17.0	27,660
Support Services (center)	188,236	6,408	50,158	10.6	26,000
Support Services (in-home)	269,773	2,855	49,534	1.4	4,408
Medical Records	85,302	-0-	27,013	-0-	-0-
Research and Evaluation	67,880	18,514	20,807	-0-	-0-
Total	\$1,141,595	\$379,761	\$349,731	--	\$143,887
Percent of Total	61.01%	20.30%	18.69%	--	--

^aIncludes costs such as supplies, equipment, and staff travel.

^bIncludes costs such as rent, utilities, maintenance, and administrative services, such as accounting.

^cCosts from four service areas (transportation, medical, research and evaluation, and medical records) were deemed not replication-relevant, and thus were excluded from this analysis.

the case management costs developed do fairly reflect the case management costs attributable to On Lok.

CONCLUSIONS

BPA has estimated the monthly per-client costs of case management and coordination for five projects at eight separate locations included in the cross-site evaluation of HCFA-sponsored long-term care demonstration projects. As shown in Table 12, for the most part, the major component of the differences from project to project in total per-client per-month costs was the difference in monthly staff costs per client. In comparative projects, it is important to note BPA made no adjustments for more costly client populations; this variable was outside the scope of this study.

The differences in the cost findings from site to site reflect in part differences in staffing patterns and levels of specialization of function, as hypothesized above in the Methodology section. These differences were expected to result in the highest costs within projects with high levels of professionalization and specialization. Our relative cost findings indicate that the level of professionalization (the percentage of staff with specialized and/or advanced degrees) has greater cost implications than does the level of specialization of case management functions, since Project OPEN showed higher unit costs than did the New York City Home Care Project. More notably, cost differences also reflect the "model" of case management chosen, which affects the amount of staff time (the largest source of variation in costs) spent on the average client. In part, the findings also represent differences in the immediate local environment: ease of access to service providers, the number and complexity of services to be monitored by case managers, the size of the catchment area and thus the amount of time needed to travel to a client's home, and the amount of coordination with referral sources and service providers needed after start-up contacts were made. A final element in the variation is regional differences in cost of living and thus in salaries of staff; the major difference here is South Carolina, which is estimated as 15% less costly than the average for San Diego, San Francisco, and New York City.¹²

Other conclusions of this study await yet another set of findings from the cross-cutting evaluation, namely, the net impact of project services on clients' functioning level, health, and rates of institu-

Table 12

Summary of Cost FindingsProduction Costs of Case Management and Coordination Systems

Project	Staff Costs Per Client Per Month*	Total Costs Per Client Per Month*
South Carolina CLTCP	\$ 40.95	\$ 47.12
On Lok	49.59	81.29
New York City HCP (average)	86.07	96.04
Project OPEN	96.52	116.84
San Diego LTCP	105.47	133.67

*For varying 6-12 month study periods, as discussed earlier in this report.

tionalization. Still, it will be difficult to separate the effects of the case management process itself from the effects of other waived services (home health, homemaker, transportation, etc., the costs of which were specifically excluded from this study). Only in projects where control group members had equal access to a fully comparable set of services would it be possible to assess the net impact of the case management process itself, and then to make judgments comparing net costs to net benefits, but, as pointed out in BPA's Final Research Design, such a comparison is largely precluded by the design of the HCFA demonstrations.¹³

NOTES

¹See Berkeley Planning Associates' Final Research Design, Evaluation of Community-Oriented Long-Term Care Projects, report to the Health Care Financing Administration, Berkeley, California, May 1981.

²A full discussion of these differences is contained in Chapter VI of BPA's Preliminary Report on Work in Progress (October 1982), "Coordination at the Client Level: Approaches to Case Management." See particularly the discussion on pp. 130-149.

³These topics are explored in more detail in BPA's earlier report to HCFA, "Comparability of Production Costs," August 1982.

⁴This process resulted in the BPA report, "Comparability of Production Costs," August 1982, to HCFA.

⁵ACCESS (Monroe County, New York) was not included in this study because an earlier study in part covered the same topics. Similar information for ACCESS will be updated during the later phases of BPA's Evaluation, to be compared with the findings of the present cost study.

⁶These are discussed in more detail in Chapter III of the Preliminary Report on Work in Progress (October 1982) of this evaluation (especially pages 45-67). They are only briefly summarized here.

⁷These differences are discussed in detail in Chapter II of the Preliminary Report on Work in Progress, pages 130-149.

⁸See "Comparability of Production Costs," Berkeley Planning Associates, August 1982.

⁹Separate time periods were chosen for the four New York City sites, as detailed in the list of time periods.

¹⁰Customary overhead is 45%; we have included only that proportion of overhead being billed to the demonstration, which is approximately 12%. The remaining 33% (or \$44,638) could be considered an in-kind donation. This would result in a monthly per-client case management cost of \$134.11.

¹¹This figure was calculated by taking one-half of the amount of time devoted to assessment and reassessment (as a percentage of total case management time) as shown in the San Diego time study.

¹²Estimates provided by the U.S. Department of Labor, Bureau of Labor Statistics, based on their Wage Differences Among Selected/Metropolitan Areas, 1982.

¹³See Berkeley Planning Associates, Final Research Design, Evaluation of Community Oriented Long-Term Care Projects, report to the Health Care Financing Administration, Berkeley, California, May 1981.

ATTACHMENT 2

Project Waivers

PROJECT WAIVERS

INTRODUCTION

The long-term care projects under study share the same general goal: to research and demonstrate the development of a comprehensive and coordinated system of in-home and community-based services that the aged and functionally dependent may need to avoid premature or inappropriate institutionalization. In order to gain sufficient flexibility to carry out this goal, it was necessary for these projects to obtain waivers of specific statutory requirements of either Title XVIII and Title XIX of the Social Security Act. Authority to grant these waivers is held by the Secretary of Health and Human Services, pursuant to Section 222 of P.L. 92-603 (Social Security Amendments of 1972) and Section 1115 of the Social Security Act.

There are two types of waivers: technical waivers and added services waivers. Technical waivers remove various aspects of the requirements associated with services traditionally covered by either Medicare or a particular state's Medicaid program. Typical technical waivers involve changes in eligibility requirements or limits on routine services. Examples of technical waivers include elimination of the prior hospital stay requirement for Medicare Part A skilled nursing facility and home health care reimbursement, elimination of the homebound requirement for Medicare home health care reimbursement, and elimination of deductibles and coinsurance. Added services waivers make possible the use of Medicare and Medicaid funds to purchase services not normally covered by these programs. In many cases, these waivers enable a project to provide optional Medicaid services that have not been included in its state Medicaid plan. Waivers may also be granted to allow federal payment for project services never before available through Medicare or Medicaid.

The waivers granted to each of the long-term care demonstration projects are charted in Tables 1 and 2. The sources of this information

Table 1
Medicaid Waivers

	ACCESS	Florida Pentastar	Georgia - AHS	California MSSP	Oregon FIG/WAIVER	South Carolina CLTCP	Texas - ICF-II	Wisconsin - CCO
TECHNICAL WAIVERS:								
Income eligibility requirements for Medicaid community services			X	X	*	X	X	
Utilization review				X				
Statewide requirement of Title XIX		X		X	X	X	X	
Limit on number of home health visits						X		X
Level of care requirements for intermediate care facility care							X	
Limits on routine services				X				
Comparability of services for groups		X				X	X	
ADDED SERVICES WAIVERS:								
Physical Therapy (PT)		X	X			X		
Occupational Therapy (OT)		X	X			X		
Speech pathology services		X	X			X		
Audiology services		X				X		
Supplies required by PT, OT, speech therapy, or audiology (except hearing aids)		X						
Geriatric nurse practitioner services		*						
Special supplies and equipment prescribed by a physician			X					
Hearing aids						*		
Eyeglasses						*		
Dental services						*		
Dentures						*		
Transportation (to nonmedical sites)	X			X	X	*		X
Transportation (to medical sites)	X	X	X			*		X
Equipment and appliances "not primarily medical in nature"								
Protective services				X				
Legal services				X				
Medical social services			X			X		
Mental health counseling						X		
Nutritional counseling				X				X
Interpreter services				X				
Adult day health care		X	X			X		X
Adult day social care				X				X
Congregate meals				X		*		
Adult residential care facility services			X		X	*		
Housing rent subsidy	X							
Client assessment and case management	X	X	X	X		X		X
Outreach				X				

Key: X = Granted
 * = Proposed, but not granted

Table 1 (continued)

	ACCESS	Florida Pentastar	Georgia - AIS	California - MSP	Oregon FIG/Waiver	South Carolina CLTCP	Texas - ICF-II	Wisconsin - CCO
ADDED SERVICES WAIVERS (continued):								
Homemaker services		X	X	X	X			X
Housekeeping services					X			
Personal care Services		X		X		X		X
Home-delivered meals			X	X	X	X		
Heavy chore services	X		X	X	X	*		X
Respite care	X	X		X		X		X
Friendly visiting	X							
Moving assistance	X			X				
Home adaptation for handicapped persons	X			X		*		
Companion services								X

Key: X = Granted

* = Proposed, but not granted

Table 2
Medicare Waivers

	ACCESS	New York City HCP	On Lok - CCODA	Project OPEN	San Diego-LTCP	Triage
TECHNICAL WAIVERS:						
Lower of cost or charges provisions		X		X		
Limits on routine services		X		X		
Separate fee-for-service reporting requirements			X			
Utilization review			X			
<u>Part A (Hospital Insurance):</u>						
(1) Posthospital extended care services:						
3-day hospital stay requirement for Medicare SNF reimbursement	X		X			X
Admission to SNF within 14 days after discharge from hospital (within 28 days if no SNF bed is available)	X		X			X
Limit of 100 days of SNF care in a spell of illness	X		X			X
Level of care requirements for SNF care ¹	X		X			X
Requirement of physician certification of the patient's need for skilled nursing or skilled rehabilitation services on a daily basis	X		X			X
Deductibles and coinsurance	X		X			X
SNF utilization review	X					X
(2) Posthospital home health services:						
3-day hospital stay requirement for Medicare Part A home health benefits	X	X	X	X		X
Limit of 100 home health visits during the 1-year period after discharge from hospital	X	X	X	X	X	X
Requirement of a beneficiary's confinement to his/her home	X	X	X	X	X	X
Level of ₂ care requirements for Medicare Part A home health benefits	X	X	X	X	X	X
Requirement of physician certification of the patient's need for home health care	X	X	X			X
Requirement of the establishment of a home health plan by a physician within 14 days of discharge	X	X	X			X
Deductibles and coinsurance	X	X	X	X		X
Utilization review	X		X			X
<u>Part B (Supplemental Medical Insurance):</u>						
(1) Home Health Services:						
Limit of 100 home health visits in a calendar year	X	X	X	X	X	X
Requirement of a beneficiary's confinement to his/her home	X	X	X	X	X	X
Level of ₃ care requirements for Medicare Part B home health benefits	X	X	X	X	X	X
Requirement of physician certification of the patient's need for home health care	X	X	X			X
Requirement of a plan for home health care set up by a physician	X	X	X			X
Deductibles and coinsurance	X	X	X	X		X
Utilization review	X		X			X

Key: X = Granted

* = Proposed, but not granted

Table 2 (continued)

	ACCESS	New York City HCP	On Lok - CCODA	Project OPEN	San Diego-LTCP	Triage
TECHNICAL WAIVERS (continued)						
Part B (Supplementary Medical Insurance)(continued):						
(2) Physician services:						
Level of care requirements for physician services ⁴			X	X		
\$250 maximum for psychiatric visits			X			X
ADDED SERVICES WAIVERS:						
Optometry services			X	X		X
Eyeglasses and contact lenses				X		X
Audiology services			X	X		X
Hearing aids				X		X
Dental services			X	X		X
Dentures				X		
Podiatry services			X	X		X
Prescription drugs and biologicals		X	X	X		X
Equipment and appliances	X		X	X		
Emergency services			X			
Transportation (to nonmedical sites)	X	X	X	X	X	X
Transportation (to medical sites)	X	X	X	X	X	
Mental health counseling				X		X
Legal services						X
Interpreter services				X		
Client/family education for the care of the chronically ill client					X	
Adult day health care	*		X	X	X	X
Adult day social care			X	X		
Adult residential care facility services						X
Congregate housing			X			X
Custodial care	*					
Intermediate care facility			X			X
Housing rent subsidy	*					
Client assessment and case management	X	X	X	X	X	X
Discharge assistance				X		
Moving assistance	*					
Home health maintenance visits for chronically ill persons who are no longer eligible for services under Medicare because they have reached a stable state					X	
Homemaker services	*	X	X	X	X	X
Personal care services	X	X				
Home-delivered meals			X	X	X	X
Heavy chore services			X	X		X

Key: X = Granted

* = Proposed, but not granted

Table 2 (continued)

	ACCESS	New York City HCF	On Lok - CCODA	Project OPEN	San Diego-LTCP	Triage
ADDED SERVICES WAIVERS (continued)						
Respite care	*			X		
Companion services						
Friendly visiting	*					X
Home adaptation for handicapped persons	*					
Licensed practical nurse services	X					
Nutritional counseling			X			
Congregate meals			X			

Key: X = Granted

* = Proposed, but not granted

¹An individual must need, on a daily basis, skilled nursing services or skilled rehabilitation services which, as a practical matter, can be provided only in SNF on an inpatient basis, and which are for either a condition which was treated in the hospital, or for a condition which arose while the individual was in a SNF receiving care for a condition for which he received inpatient hospital services.

²An individual must need skilled nursing care, physical therapy, or speech therapy on an intermittent basis for further treatment of a condition which was treated in a hospital or SNF.

³An individual must need skilled nursing care, physical therapy, or speech therapy on an intermittent basis.

⁴Diagnostic tests not associated with previously diagnosed illness, routine physical examinations, routine foot care, and eye or hearing examinations for prescribing or fitting eyeglasses or hearing aids are not covered by Medicare medical insurance.

are project grant applications, documents produced by the projects, and available case studies. In some cases, the actual waivers granted to projects may have differed from those requested, changes may have occurred since completion of the case studies, or waivers implicit in mounting the demonstration may not have been referenced in the source documents.

MEDICAID WAIVERS

Medicaid regulations are said to be biased in favor of institutional long-term care in that they often make it possible for an individual who would be eligible for Medicaid services while placed in an institution to be ineligible while living in the community. Medicaid regulations (42 CFR 435.231) permit states to set a higher income eligibility level of institutionalized beneficiaries than the community-based eligibility level.¹ In order to remove the institutional bias of 435.231, five of the eight Medicaid demonstration projects requested waivers of the income eligibility levels for individuals residing in the community. It is important to note that new regulations implementing the Omnibus Budget Reconciliation Act of 1981 (P.L. 97-35) remove the incentive toward institutionalization created by 435.231. These regulations permit states to make eligible for Medicaid those categorically needy individuals in the community "who would be eligible under 435.231 if institutionalized."²

Several of the Medicaid demonstrations have been granted waivers that enable them to provide optional or "discretionary" Medicaid services that are not covered under their state Medicaid plans. Among the eight states in which the Medicaid demonstration projects are located, Florida, Georgia, and South Carolina offer the most restricted packages of Medicaid services. To "fill in" gaps in Medicaid-covered services, the demonstration projects in these three states requested and were granted waivers to allow Medicaid payment for the following optional services: physical therapy, occupational therapy, speech pathology services, adult day health care, and personal care services.

Other added services waivers enable projects to provide services that have been funded by other government programs such as Title III of the Older Americans Act or Title XX of the Social Security Act, but are new to the Medicaid program. These services include transportation, protective services, legal services, congregate meals, home-delivered meals, residential care facility services, heavy chore services, and friendly visiting.

A majority of the projects judged the following services to be important and decided to add them through Medicaid waivers: transportation, adult day health care, case management, homemaker services, personal care services, heavy chore services, and respite care. In comparison, the following services are unusual in that each was requested by only one project: mental health counseling, protective services, legal services, interpreter services, and companion services.

MEDICARE WAIVERS

Numerous technical waivers have been granted to each of the six Medicare demonstration projects. These waivers alter requirements associated with services traditionally covered by the Medicare program. In general, they represent attempts to broaden the target of Medicare services to include individuals with needs for long-term care. Technical waivers were granted that eliminate the prior hospital stay requirement and level of care requirements for skilled nursing facility and home health care reimbursement, and remove the limits on the number of days of skilled nursing facility care and number of home health visits covered by Medicare, thereby liberalizing eligibility requirements for these services and increasing Medicare's coverage of long-term care. It is important to note that the requirements specifying the coverage of home health care by Medicare have been changed since the Medicare demonstrations began. The requirement for prior hospitalization and the 100 visits limit for home health care were removed by the Omnibus Reconciliation Act of 1980.³

The Medicare demonstration projects also received added services waivers. Services such as transportation, adult day health care, adult

day social care, homemaker services, heavy chore services, personal care services, respite care, and home-delivered meals were added by projects to broaden the spectrum of services available to their Medicare clients with long-term care needs. Other services added provide the chronically ill individual with opportunities to take an active role in meeting his or her own needs. Services such as mental health counseling, legal services, interpreter services, and client education for self care are intended to increase clients' capacities for independent community tenure, while removing unnecessary psychological or informational barriers to home care.

The services most often added through Medicare waivers are prescription drugs and biologicals (so that those that are self-administered can be covered), transportation to medical and nonmedical sites, adult day health care, case management, homemaker services, and home-delivered meals.

NOTES

¹This level cannot exceed 300% of the Supplemental Security Income (SI) community-based payment standard (42 CFR 435.722 and 435.1002); Federal Register, Vol. 46, No. 190, Rules and Regulations, October 1, 1981, p. 48537.

²Ibid., p. 48537.

³Karl A. Pillemer and Andres S. Levine, "The Omnibus Reconciliation Act of 1980 and Its Effects on Home Health Care," Home Health Care Services Quarterly, Vol. 2, No. 2, Summer 1981.

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